A search for the work-related curriculum: The relationship between schooling and employment in Iran

Azizi, Nematollah

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A SEARCH FOR THE WORK-RELATED CURRICULUM: THE RELATIONSHIP BETWEEN SCHOOLING AND EMPLOYMENT IN IRAN

Submitted by Nematollah Azizi

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ProQuest LLC
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106-1346

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ABSTRACT

Although the system of education in Iran has been reformed several times since the 1970s, the system is still struggling with many educational problems needing to be treated in appropriate ways. One of the problematic fields in this system is the way education tries to respond to the economy and the labour market needs. This research was therefore an attempt to review the nature of the relationship between secondary education and employment in Iran. The central aim was to highlight the problems and weaknesses of secondary education in relation to work preparation. The investigation focused on the following areas: (i) analysis of the quality of education at the secondary level regarding labour market requirements; (ii) educational policy reform in relation to economic needs; and (iii) employers' judgements about the performance of the school system seen from an employment perspective.

Questionnaires and interviews were used for data collection. Questionnaires were distributed to a sample of 110 teachers (65 males and 45 females) selected from 12 secondary schools and 115 students (69 males and 46 females) from four universities randomly selected. 12 Senior Ministry officials and 12 key employers were also interviewed. In order to analyse data Chi-square was used.

The research findings indicate a big gap between what is taught in schools and what employers require. The key issues are that: employers are not

satisfied with the schools' preparation for the world of work; the school curriculum favours theoretical rather than vocational subjects; technical and vocational education does not have a positive status among parents and students; and the government has been reluctant to invest in this field because of its high costs.

One attempt to resolve these issues has been restructuring the educational system. In the reformed secondary system policy makers have been encouraged to follow some of the European models like the German dual system but also, to vocationalise the secondary level of education. This has been developed in the second five-year development plan for 1995-2000 where the ratio of students in Technical and Vocational Education is to be raised from 10 per cent in 1994 to 50 per cent by the end of plan.

The results obtained from this research suggest that:

- It is necessary that the secondary school curriculum be reformed in order to address the needs of the labour market;

- The relationship between education and the world of work can be stronger and more effective if industrialists become involved in the process of the school curriculum development;

- The preparation of youth for employment should consider some invaluable schemes and programmes which are crucial such as work experience, careers education and guidance, and so on.

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CHAPTER ONE

INTRODUCTION

Secondary education is considered an important tier in the Iranian educational system. This is because this tier is part of the educational chain which links general education to the further and higher education system: any weaknesses and problems in the structure of this educational level will affect the performance and quality of post-secondary education. Secondly, this level is a transitional period: a transition from general, public, and lower educational levels to higher education which is specialised, and limited to small number of young people; and transition from schooling life to the world of work and adult life. Thirdly, similar to many countries, this level is the main source of supply of skilled people for the home labour market, which has a special effect on the success of the socio-economic development plans.

Although secondary education in Iran will complete the implementation of the 1991 educational reforms in all secondary schools and the current secondary system will be changed in the next two years, many educational problems still need to be treated in appropriate ways. However, no systematic research has

been carried out to investigate the problems which hinder secondary education from achieving its objectives. This research is an attempt to provide a foundation for addressing these problems, from which policy indicators or further studies might be considered. However, the purpose of this introductory section is to set the landscape for the empirical research which forms the body of this thesis.

1.1 The problem

Despite the many reforms which have been launched in education since 1960, particularly after the 1979 Revolution, regarding changes to the structure and organisation of the educational system in general and secondary education's objectives and policies in order to improve the effectiveness of secondary education system in particular, many problems and developmental issues remain. My hypothesis is that a negative feature of secondary education is its strong focus on academically-based courses which are studied by around 90% of secondary school students. Whilst this issue has been recognised by educators and educational bodies, no systematic attempts have been made to examine this problem in detail. As a consequence of this policy, every year a huge number of high school graduates (1,200,000 in 1996/97) participate in the University's Entrance Exam (Conquer) while only about ten per cent of them have the chance of being offered a place. While all the resources are spent on academic secondary education, our technical and vocational education with its poor conditions has

nothing to attract students and their parents. It seems that these problems interrupt the objective of preparing a well qualified and appropriately trained workforce to meet the increased economic development needs of Iran as a developing country. It is probably genuine that the shortage of skilled and semi-skilled people in the Iranian workforce was one of the main factors preventing the realisation of the objectives of a number of socio-economic development plans (ME, 1990).

Taking into account the opinions of involved people in this study e.g. teachers, students, officials in the Ministry of Education, and employers and also the review of the literature the researcher hypothesises that the following might be some of the reasons underpinning this problem:

1. Traditionally a higher status has been given to academic studies than to technical and vocational education. An academic education has been considered as prestigious and leading to higher education, whereas vocationally-oriented education has been considered as low status education leading to so called 'blue-collar' jobs. Thus schools with an academic emphasis have been attractive to both higher ability and ambitious students. This is an important reason which may explain the apparent reluctance among students to enrol in technical and vocational education programmes in school and also for parents not allowing their children study in a such courses.

2. The secondary school curriculum is structured and organised in a way which seems to prepare students only for higher education and, as a consequence of this, the majority of secondary school students leave school having followed largely academic courses. Thus they have no vocational skills to enter the world of work and a limited opportunity to gain access to higher education. According to the Ministry of Culture and Higher Education (1996) in the recent years only ten per cent of all secondary school leavers had the opportunity to attend higher education. Of 1,200,000 students who sat examinations at the end of secondary schooling in 1996, only 150,000 were accepted to enrol in higher education. This excludes those people who are accepted for 'Open University'.

3. The lack of investment in the technical and vocational education is partly because of its high cost. It is claimed that this is because of the expensive requirements for equipment, materials, curriculum development, teacher training, personnel and management requirements. Additionally, there is the higher cost of the small class sizes required for pedagogical effectiveness in this area. This problem is compounded by the various economical circumstances in Iran.

4. Insufficient information is available for students about careers and employment opportunities. It is claimed that this is because of the absence of career education and guidance in secondary schools across the country. As a

result, students do not have adequate information on which to build their educational and career choices.

5. The 'Kad Project' (work experience scheme) and its termination failed because of its weak results in terms of giving a realistic understanding about employment opportunities to students.

6. There is no strong relationship between the structure and contents of the school curriculum and the circumstances of rural and local areas.

7. The lack of flexibility in the organisation of education in order to link education to other societal sectors is problematic.

8. Theere is no clear signs of industrial involvement in the educational decision making in order to address needs the economy in the school curriculum.

1.2 Purposes of the research

The following are the main purposes of this study through which the above issues will be addressed:

1. Examine the views of secondary school teachers and university students towards secondary education.
2. Examine the views of educational policy makers towards the relationship between education and the economy.
3. Ascertain whether there is a connection between the school curriculum and the needs of the labour market

4. Examine the factors which may influence the introduction of effective technical and vocational courses in secondary schools.
5. Highlight the educational problems which may affect youth employment opportunities directly and how these problems might be addressed in the restructured secondary education .
6. Discuss ways in which the secondary school curriculum might be improved in terms of approaches, structure, and organisation in order to equip students with skills required for the labour market.

1.3 Significance of the study

The 1991 Educational Acts in Iran which adopted the policy of implementing a new secondary education system meant that new technical and vocational education would be represented alongside academic education in secondary schools. This represents an enormous investment in terms of both human and financial resources. The expected outcome of this reform is to prepare a new generation with the knowledge, skills and attitudes to make important contributions to the economic and social development of Iranian society. But the new system is still on trial and it is soon be reviewed regarding its outcomes such as its strengthens and weaknesses. Also the fact that the current secondary education still covers more than two-thirds of the whole 14-18 years old students (more than two millions students). Therefore, there is a legitimate need to discuss and analyse implications of the innovation on secondary education and to determine the extent to which it contributes to the realisation of the objectives of the comprehensive national strategy. Additionally, the rapid rate of social,

economic and technological change during the last decades have made the current secondary education inadequate to enhance the economic development of Iran.

1.4 Research questions

This study was designed to analyse secondary school teachers', university students', policy makers', and employers' answers to the following questions:

1. What are the characteristics of the school curriculum and how it can be described?
2. To what extent do the academic courses in secondary education place emphasis on those skills and qualities which are crucial for the world of work?
3. To what extent do the problems and weaknesses of secondary education affect the employment chances of high school graduates?
4. To what extent is there a connection between the needs of the labour market and the high school curriculum?
5. To what extent should the high school curriculum be sensitive to local employment circumstances?
6. What is the emphasis of the current high school curriculum from the academically or vocationally-based education point of view?
7. What sort of curriculum would maximise the employment chances of students?
8. To what extent should schools use careers education and guidance services to help their students make career chances?

9. How can secondary school pupils be prepared so they can meet more effectively the demands of their future work life?

CHAPTER TWO

GENERAL BACKGROUNDS AND EDUCATIONAL DEVELOPMENT IN IRAN

2.1 Geographical and historical background

The Islamic Republic of Iran is a mountainous, high plateau country with an area of 1,648,195 square kilometres. It stretches from the Caspian Sea, Azarbaijan and Turkmanistan in the north, to the Persian Gulf in the south and from Turkey and Iraq in the west to Afghanistan and Pakistan in the east (see the map in p. 11). Iran thus forms strategically the land-bridge between the Middle East and Asia. Owing to its favourable geographic location, for thousands of years, Iran has been a cross-roads of cultures and civilisations and has hence been strongly subject to foreign influences. These have included the invasions by the Arabs, Mongols, and Tartars, and various forms of interventions by France, the United Kingdom, and Russia in the nineteenth and early twentieth centuries and also by the former Soviet Union and the United States in the period following the Second World War. Despite these foreign influences, the national culture and language have demonstrated remarkable continuity.

In accordance with the Law of Administrative Divisions (1996), Iran consists of 27 provinces (Ostan) in which there are several township and districts. Different censuses show that Iran's population has grown from 16 million in 1956, through 33 million in 1976 to 60 million in 1996 with an average annual rate of growth of 2.6% during the last 40 years (Statistics Centre of Iran, 1997). The people in Iran represent an ethnic cross-section of all regions, people and nations. They can be divided into Persian, Turks, Kurds, Arab, and Balooch or mixes of the above groups. Islam is the religion of the vast majority of the whole population while other minorities such as Jews, Christian, and Zoroastrian have the right to practice their own religion. Persian is the only official language in the country.

Historically, the word Iran as the country's name was chosen in 1935. Previously it was known as Persia. Before the spread of Islam the Persian Empire was established by King Cyrus the Great (of the Persian Achaemenid dynasty) in 6th century B.C., from Aryan people who migrated from the region around the Aral Sea thousands years ago. Over a period of five centuries (1040-1500) Iran witnessed Arab rule until the Islamic Empire began to fall apart. The Safavid dynasty restored Iran's former greatness in sixteenth century and it was a starting point in establishing contact with the west. These kingdoms continued until 1979 when the last one (Pahlavi rule) was overturned by the Islamic Revolution.


Capitals
Cities
Points of Interest
Salt Lake
AZERBAIJAN
RMENIA
Baku
Aras
Caspian Sea
TURKMENISTAN
KARAKUM DESERT
Lake Urmia
Tabrīz
Ardabīl
Qolleh-ye Damāvand 5671 m
Ashkhabad
Rasht
Orūmīyeh
Gorgān
KOPPEH DĀGH
Zanjān
ELBURZ MTS.
Sārī
Qezel Owzan
Qazvīn
Sabzevār
Mashhad
Amol
Sanandaj
Tehrān
Semnān
Hamadān
Qom
Darvācheh-ye Namak
Bākhtarān
Borūjerd
Arāk
DASHT-E KAVIR
Īlām
Kāshān
Baghdad
Khorramābād
AFGHANISTAN
IRAQ
ZAGROS MTS.
Meydān-e Shāh
Tigris
Dezfūl
DASHT-E LŪT
Esfahān
Yazd
Shahr-e Kord
Ahvāz
Khersān
Euphrates
Yāsūj
SISTĀN
Kermān
Abādān
Persepolis
KUWAIT
Shīrāz
Zāhedān
Kuwait
Bandar-e Būshehr
Dārāb
SAUDI ARABIA
Bandar-e 'Abbās
BALUCHISTAN
Persian Gulf
Strait of Hormuz
al-Manāmah
PAKISTAN
QATAR
BAHRAIN
Doha
OMAN
Gulf of Oman
Abu Dhabi
U.A.E.
Muscat
100 200 mi
160 320 km
1994 Encyclopaedia Britannica, Inc.

2.2 *Economic Overview*

Iran has a huge economic potential which, if carefully planned, could make it one of the most successful countries in the region (Bakhtiari, 1993). But for many reasons e.g. political, economic and administrative the country has not been able to utilise these huge economic capabilities. Changes in the structures, strategies, and policies in Iran's economic system have been dramatic during last three decades. Before the 1979 revolution, it was a capitalist-based economy in which the private sector had a great role and participated in different fields of it, and international investments were developing on a large scale. The emphasis on industrialisation caused neglect of the development of other economic sectors particularly the agricultural sector, which resulted in the weakness of this field. For the first time the Iranian government had to import foodstuffs.

Iran's economy is a mixture of central planning, state ownership of oil and other large enterprises, private trading and service ventures. Over the past several years, the government has introduced several measures to liberalise the economy and reduce government intervention, but most of these changes have moved slowly except since recent years in which government showed a significant intention to liberalise the economy.

The economic policy of contemporary Iran has been shaped under the complex influence of a number of internal and external factors. Naturally, the changes which have taken place in the aftermath of the Islamic Revolution have not only affected politics and society but also the country's economy.

Within Iran's post-revolutionary economic development, one can distinguish two important phases.

2.2.1 Iran's Economy between 1979 and 1988

During the first phase immediately following the Islamic Revolution the ruling institutions took drastic measures in order to increase state control over the economy. Thus, on 8th June 1979, the Revolutionary Council issued a decree authorising the then provisional government to put the management of all the country's twenty-eight banks under its control. Only few weeks later, on 25th of June, the insurance system consisting of eleven major companies was nationalised, and by 1982, the government had taken control of all enterprises having more than 1,000 employees. Affected by this policy were not only those major industries which already had been under the supervision of state authorities before the revolution, such as oil, gas, steel producing companies, petrochemical plants, public utilities (water and electricity), and Iran's railroad, service; the government also extended its control to other industries which it deemed of vital importance to the country's economy, e.g. the metal processing industries, the car industry, as well as shipyards and aircraft construction enterprises. Of special interest to the revolutionary government was also Iran's foreign trade, which had been newly regulated and subjected to the control of thirteen national marketing centres.

The Iraqi aggression against Iranian territory put an end to the government's efforts to change Iran's economic set-up. In effect, the imposed war formed the transitional period towards the second major phase in the country's economic development. During the war years, the administration was forced to redirect its resources in order to make up for the damage inflicted by the war and meet the basic needs of the population. On the whole, the conflict, which cost the country more than 600 billion dollars, had thwarted the government's ambitious endeavour to make use of the country's post-revolutionary potentials and recast the national economy.

2.2.2 The Post-War Period

There can be no doubt that the imposed war formed a major break in Iran's post-revolutionary development. However, there were a number of additional factors which posed severe burdens to reconstruct the country's economy: With Iran's industrial output being reduced to 40 percent of its potential capacities, it had to meet the needs of a population whose number had doubled within only one decade. Furthermore, it had to cope with a total of 2.5 million refugees who had fled to Iran from Afghanistan and Iraq. All the while the budget deficit amounted to more than 52 percent and the national inflation rate had exceeded 20 percent.

The country's economic reconstruction effort following the imposed war with Iraq was accompanied by a number of important developments on the international as well as on the domestic scene. Thus, the first development

programme, framed for a period of five years, was influenced not only by the large-scale breakdown of socialist doctrine triggered off by Gorbachev's Perestroika but also by an amendment of the Iranian Constitution granting the country's president more power and thereby putting economic construction under the control of the executive. After a policy of nationalisation during the pre-war period, the first five-year plan, presented under the former President Hashemi Rafsanjani, took a market-oriented approach, providing for a number of measures to encourage the development of free enterprise.

2.2.3 Iran's Foreign Economic Relations

The decline of oil prices and the problems in connection with the repayment of foreign exchange debts have made it clear that the country needs to look for additional foreign exchange sources. As a consequence, the development of non-oil export industries will be of special importance. Furthermore, in opening up new markets for both its oil and non-oil exports, the Islamic Republic will have to further adjust to a free market-oriented approach which allows for more flexibility.

Whatever is the precise direction Iranian economic of the policies in the future, the following factors are very likely to influence the country's future developments:

- The second five-year plan is to be more cautious with respect to foreign investments, foreign credits, and the import of goods which are not deemed vital for the country's economy.

- Due to the rising proportion and growing importance of non- oil exports, Iran's trade relations with other countries in the region will further expand. Consequently, Iran intends to intensify its economic relations with the neighbouring states in the Persian Gulf and the members of the Economic Co-operation Organisation (ECO). In recent years, there has been a steady expansion of trade relations between Iran and the former GUS states. Furthermore, relations with Iran's neighbours on the Persian Gulf will also continue to play an important role in the country's economic developments.

- Trade relations with countries in the Far East will further gain importance, and thus reduce the share of OECD states in the Iranian economy. This trend is already visible in Iran's trade relations with South Korea and Thailand. The observable extension of bilateral trade relations with these countries is based primarily on a mutual interest in strategic investments in non-oil industries.

- As a consequence of its gradual orientation towards a free market-oriented economy based on private enterprises especially in non-oil industrial domains, Iran's foreign trade will be less and less planned by

governmental bodies. This, in turn, means that a growing portion of foreign exchange will be made by private traders.

- Although oil will undoubtedly continue to be the most important source of foreign exchange, the export of gas will gain further importance. Technological transfer from industrial nations and foreign investments may function as a catalyst in this area.

- Trade relations will be increasingly based on regional bilateral co-operation, even if there are marked differences between the orientation and development of national economies.

2.2.4 First Five-Year Economic Plan(1990-1995)

Iran's centrally planned economy lasted for almost a decade and went on throughout the Iran/Iraq war in the period 1980-1988. Iran's pro-war economic policy started to take shape with the introduction of the First Five-Year Economic Plan (1990-1995). While a new five-year economic plan was approved by the Iranian Parliament in June 1990, deep factional differences persist on important economic issues, including reconstruction strategy and the role of foreign assistance. As a result, there has been little progress toward solving these problems.

The five-year plan forwarded by the administration of the former President Hashemi-Rafsanjani envisions, among other things, average annual growth of 8 percent, 10.3 annual increase in investment (over 60 percent of which would

go to the private sector), gas and oil revenues totalling $83 billion over five years, and a general break with the tight, centralised government controls of the last eight years. Proponents of a centralised, planned economy have been highly critical of the plan.

Speaking before the IMF-IBRD meeting in Washington in 1990, Iran's Finance Minister vowed that the Government is moving to reduce restrictions on economic activity, sell government-owned shares in various state companies and institutions to the public, activate the stock market, establish free trade and industrial zones, and engage in joint investments with foreign firms. Minimal progress was made in these areas, however, during 1991.

Since the early 1990s, Iran has voluntarily adopted the principle of the IMF's restructuring rules, albeit without asking for IMF loans in return. Its liberalisation programme follows conventional lines: privatisation, deregulation, cutting subsidies, devaluation, encouraging foreign investment (Smith, 1997).

The plan stressed economic growth through increased capital expenditures in oil, gas, petrochemicals and mining sectors. The First Five Year plan, which before had been approved by the Majlis, allowed for foreign investments up to the value of 17 billion dollars, the creation of four free trade zones, the abolition of a number of import bans, and the support of non-oil exports. As a result, the government scored quick successes in some areas. Thus, during the term of the first five year plan, the country's economy reached an average

growth rate of 7.5% per year; the non-oil exports rose from one to four billion dollars; and Iran has since become largely independent of imports with respect to strategically important goods, such as wheat. Important steps were also taken with respect to the development of the country's infrastructure and utilities. The main achievements of the plan were:

- annual average growth domestic production and employment growth in 1994-5.

- Growth on non-oil export during the plan years has been 30% per year and its share increased from 5% to 16%. The share of industrial exports was 35%.

- imports over the 1991-92 period were $24.9 billion but in 1993-94 under $17 billion.

- the share of such deposits to total bank deposits increased from 17.4% to 22%. At the same time outstanding credit extended by banks to the private sector increased from 38.9% in 1988-89 to 59.6% in 1992-93.

- liquidity increased by about 23% during the plan period, part of which was due to exchange rate adjustment.

- government income in the first four years of the plan increased 47.4% per year.

- the budget deficit decreased from 10% of GDP in 1988-89 to less than 1% of GDP in 1992-93.

- government tax revenue in 1992-4 was 4.5 times that of 1988-89. The ratio of tax revenue to GDP increased from 4.3% to 6.4% in the period.

- the share of development expenditure in total increased from 19.4% in 1988-89 to 38% in 1993-94. Around 115 major projects were undertaken during the plan period and most of these were connected with water, energy, transport, agriculture, industry and mining (Tradenz, 1997).

- Within this period the country established most of the infrastructure for growth. The country had suffered horribly over the past decade: the revolution, the war, the collapse of oil production and prices, and the sharp population growth between them had caused income per head to drop by 45%. Under the plan, heavy industry, communications, roads, power (Iran now exports electricity) and schools began to be put in place (Smith, 1997).

- Finally, the first five-year plan also brought about a general stabilisation of the budget. Thus, revenues from taxation showed an annual growth of 41%, and the budget deficit was reduced from 9.8% in 1989 to 1.7% in 1993 (Central Bank of Iran, 1995).

One of the unfortunate incidents that occurred during the implementation of the First Five-Year Economic Plan was the falling of oil prices resulting in

serious payment delays on the part of the Iranian banking system forcing the Central Bank of Iran to adopt more control and austerity measures on imports.

2.2.5 Second Five-Year Economic Plan (1995-2000)

Iran's Second Five-Year Economic Plan, outlines the government's goals and objectives between 1995 and the end of the century. The bill passed by the parliament in April 1995, aims to expand the industrial base of the country while assuring economic growth. The First Five-Year Economic Plan envisaged non-oil exports of $17 billion, which in the Second Five Year Economic Plan have been increased to $27 billion. The increase is covered by export of petrochemical products and outputs of expanded iron and steel, copper, cement and similar other industries. For further promotion of exports a high-level advisory committee has been set up, known as the Export Credit Fund. Other facilities include transport and customs facilities.

The plan aims to continue the work of the first, setting out to expand non-oil production and exports but continuing to be driven by Iran's oil, which still accounts for well over 80% of its export earnings.

Iran's GNP is expected to grow at an annual rate of 5.1%. Predictions are based on Iran's financial conditions as well as the world oil market.

The government intends to continue with its investment programme which aims to rebuild and modernise the country. Investment projects which offer a lasting benefit will be given priority.

Reforms started in the first Plan will continue, including privatisation and streamlined government, rationalisation of subsidies and prices, deregulation, unification of the exchange rate system, steps to ensure social justice and protection of the purchasing power of vulnerable groups.

2.2.6 "Non-Oil Economy" Plan

The Iranian planning and budgetary organisation presented a report on the "non-oil economy" plan. The plan, which indicates an economy not depending on the revenues of raw petroleum, is expected to be carried out within 2 decades (20 years). This 20-year plan of the country has been made on the basis of "econometric" models and the data collected from 1966 to 1996.

In the coming 20 years, the average growth rate of the annual Gross National Production will be 7% and it is anticipated that it will reach 6.7% until 2006 and 7.4% from 2006 to 2016. The unemployment rate is also expected to reach about 5.2% in 2016 and the rate of oil products' price will increase to 7% in real terms.

The ratio of the government's current expenditure and that of taxes to the Gross Domestic Production will be 14% and 11.3% respectively in the year 2006. Tax revenue will cover 90% of current expenditure in 2006 and its anticipated rate of 120% in 2016 will provide a part of development expenditure. During the first decade, from 1996 to 2006, the anticipated growth rate of value will be 5% in agriculture, 8% in industry, 6.3% in services and 8% in the gas and oil sectors and during the second decade, from

2006 to 2016, the added value of the above-mentioned sectors will be 5.1%, 10.2%, 7.4% and 5.8 respectively.

Iran's foreign currency income from export is expected to reach $25 billion in 2006 and $62 billion in 2016, of which $41 billion will be gained from exports of petrochemical, mineral, industrial and traditional products, $14 billion from exports of oil and oil products and $7 billion from agricultural products exports (MFA, 1997).

The former President of Iran in his report in 1995 to parliament considers three goals to be priorities within the programme of economic stabilisation:

1. using financial instruments, increasing the share of taxes, controlling liquidity and boosting the efficiency in utilising national resources.
2. paying greater attention to the organisation of various markets to supply better goods, services and manpower throughout the country.
3. enforcing administrative discipline, better management and increasing efficiency.

2.2.7 Key Figures In Economic Sectors

A: Industry

Industrial development in Iran dates from 1934, but industrialisation took place at a considerable rate in the 1960s and 1970s. Previously, industry was confined to small workshops producing foodstuffs and clothing. The most

important industry was carpet weaving. At present, two of the most important industrial fields in Iran are steel milling and the oil industry. In fact, the most strategic industry in the country which is still in its formative stages is steel milling. The industry is designed on such a scale that once completed, it will bring Iran onto the list of major industrial countries in the world. Also, Iran is one of the world's greatest oil producing countries (Bakhtiari, 1993). Manufacturing industry accounts for about one-sixth of the economy, and is focused on textiles, food processing, chemicals, cement, light metals, and transport equipment (Pragrell & Castle, 1990). Industry (including mining and manufacturing, construction, power, textile, food processing and transport equipment) contributed an estimated 36% of GDP in 1994/95 and employed 27.6% of the working population in 1991 (The Europa World Year Book, 1996)

B: Agriculture

Iran is largely an agricultural country. The agricultural sector is important for the number of people that it employs, but it has performed poorly in recent years and Iran has to import large quantities of foodstuffs: this is a country which was a net exporter of the these products before 1970s. Agriculture has suffered from the war; land reform; and a shortage of equipment and materials (The World Factbook 1991-92). However, the government has placed agricultural reform as one of the top priorities in its economic plans. The policy emphasises the training of people who work in this sector, equipping them with better and new knowledge of methods of farming

through short-term courses, encouraging agricultural workers to follow the experts' recommendations, providing them with up-to-date equipment in this field (Hunter, 1995). Agriculture (including forestry and fishing) contributed an estimated 21.2% of GDP in 1994/95. About 24.7% of the labour force was employed in agriculture in 1994.

C: Services

The service sector is the largest sector with a variety of employment opportunities and which engages a large number of human resources in different fields. The services sector contributed an estimated 42.3% of GDP in 1994/95 and employed 43.6% of the working population in 1991.

2.3 Employment Policy

The country is in the period of construction and development in which skilled labour is very much required. Therefore the education and training system in order to prepare the required workforce, has to play a remarkable role in this historic attempt. But the question is 'how responsible is the education and the training system in the attempt to prepare skilled workforce for this purpose'. From to the previous section in which the direction of the Iranian economy has been shown, it is possible to see the economy in two different sectors; one, a modern economy with the high intention of carrying out industrialisation and access to high information technology, or entering global economic competition (Post- Fordisit). Secondly, traditional sectors in which manual labour in its production process is still crucial such as carpet

industry but this area also needs more skilled, knowledgeable and creative labour in order to improve the quality of its products.

In the first sector, the country wants to undoubtedly enter to the global market. A brief look to the country's 'Non-Oil-Economy' would clarify the government's employment policies, where it expects to raise the country's non-oil-export from $3 billion at the present time to $41 billion in 2016. Obviously, achieving this requires more and more investment in industry and business and reforming the structure of the economy which leads to changing the present employment structure (Figure 2.1). This movement has been started and needs to be continued seriously. During the first and the second five-year plans the country constructed some of the most basic and strategic industrial foundations which raised the hopes for a better economic situation, but shortage of manpower seems to be problematic in this process. Two important factors need to be considered. One factor is the youth of Iran's population. According to the latest census (1996), more than 50 per cent of population are under 20 years old. The second factor is that the highest rate of unemployment is amongst young people (see Figure 2.2).

As you see in Figure 2.1, at the present time the agricultural sector as the traditional economic base with more than three million labour force is the largest field in terms of number of people employed. But in next twenty years according to the missions of the 'non-oil economy plan' the manufacturing sector will lead the country's economy by providing about two-third of Iran's

hard currency. In order to achieve this, logically, the employment structure must be changed in favour of industrial activities.

Also as you see in Figure 2.2, the greatest number of unemployed people are amongst young persons aged 15 to 30 years with middle and secondary education. Most likely, according to the government economic strategies, employment opportunities are and will be created in industrial sectors. However, as I have argued there is a contradiction between this policy and the direction of the schooling system, in particular secondary education. This contradiction has highlighted the skill shortages as one of the key issues in development of the economy in the country. It also may will lead to greater social problems. The shortage of skilled people in some areas is critical which officials have claimed is due to a misdirected education system. The Minister of Labour and Social Affairs recently has claimed that:

> While our labour market needs young people with key skills such as computer literacy and other core skills desperately, numbers of educated people are unemployed (Ettelaat, 1995).

Economic Sectors	*Labour force*
Agriculture, hunting, forestry, fishing	*3357263*
Mining and quarrying	*119884*
Manufacturing	*2551962*
Electricity, gas and water	*150631*
Construction	*1650481*
Trade, restaurants, hotels	*1927067*
Transport, storage and communications	*972792*
Financing, insurance, real estate and business Services	*301964*
Community, social and personal services	*1601552*
Activities not adequately defined	*257028*
Total employed	***14571572***
Unemployed	***1455651***
Total labour force	***16027223***

Table 2.1: *Economically active population, aged 10 years and over, 1996 census.*
Source: *The Statistics Centre of Iran (1997).*
Note: *This figure does not include those self-employed women who work at home. According to census 1991 total population, aged 10 years and over, was 38655049.*

Age Group	Total	Adult Ed	Primary Ed	Middle Ed	Secondary Ed	Higher Ed	Religious Ed	Informal Ed	Unclear	Illiterate
10-14	103474	2475	55888	19042	252	0	23	166	646	24982
15-19	365569	7620	96859	143661	90216	417	69	322	1204	25201
20-24	363098	8114	66634	105936	146360	16052	152	434	1060	18356
25-29	198245	5101	41716	49973	61207	23441	177	630	571	15429
30-34	95878	3241	22259	23438	25633	6266	96	782	275	13888
35-39	69776	3175	17709	10247	17085	3026	62	1398	212	16862
40-44	49623	2456	13788	3981	8997	2611	59	1611	173	15947
45-49	34794	1717	9492	2037	4293	1831	67	1500	118	13739
50-54	29200	1145	6960	1352	3198	1618	60	1477	85	13305
55-59	31260	961	6398	950	2312	1214	67	1921	101	17336
60-64	35447	841	5320	601	1557	799	75	2400	86	23768
+65	79051	930	9432	795	2127	870	223	5936	204	58534
Unclear	236	4	41	8	0	0	0	5	128	50
Total	1455651	37780	352496	362021	361883	58145	1130	18582	4863	257397

Table 2.2: *Unemployed Pupulation by Age and Education Level, 1996 census. Source: The Statistics Centre Of Iran (1997).*

In order to prepare skilled people, the country's employment policies have not only been focused on reforming secondary education as a main supplier of human resources but also in establishing and equipping permanent technical training centres. In this respect, the numbers of technical and training centres administrated by The Ministry of Labour during the last few years have increased from 65 to 120 which by the end of the second Five-Year Plan (1995-2000), this number will be increased to 193 centres (Ministry of Labour, 1995). In 1996 the number of people who attended training courses administrated by The Ministry of Labour reached more than 500 thousand which is remarkable. A Further manifestation of the government is intention to raise skills is the the policy of selection of '*the Year's Best Labour*'. Regarding this selection, there are some standards and criteria with which numbers of workers in various areas are selected, rewarded, and publicly announced on the 'world labour day', the first of May each year. These criteria include: creativity; initiative and hard work; good relationships and communication with others; establishing a friendly environment; high efficiency and

productivity; trustfulness; and commitment to moral and religious principles. The government believes this policy will set the time for competition within the workforce and motivate it to gain new skills and improve its ability by active participation in training courses inside or outside the workplace.

2.3.1 Problems of the economy:

There are many problems which have resulted in poor economic development since 1960. The main problems are:

1. By the time of Islamic revolution (1979), Iran was involved with a rebellion which started just after the new government came to power in 1979, in the western provinces of Kurdistan, Azarbyjan, and Kermanshah. Many Kurds became engaged in guerrilla-type military activities against the new regime and their objective was the seeking of independence from the central government. At the same time, the country was engaged in a destructive war with Iraq over a large land area for eight years. As a result many lives were lost, thousands of people fled to neighbouring parts of the country and almost all economic activity ceased. In addition, the high cost of the war, drawing upon the limited available foreign currency, has affected the economic development of the country. It also affected the industrial development process for a long time.

2. Over 2.5 million foreign refugees are living in the country, mainly from Iraq in the west, and from Afghanistan in the east. People have fled from

those countries as the result of the fighting between their ruling governments and opposition forces.

3. As a result of large economic and developmental gaps between the rural and urban areas and the government ignorance of rural development over the years, a huge number of people have migrated from the country to urban areas. In order to close this gap between urban and rural areas the government has established a new Ministry (Construction Ministry) which is responsible for the improvement of rural life.

2.4 The educational system in Iran

The educational system of any nation reflects its social, political, cultural, and economic systems. Thus the study of the educational system in Iran will provide the reader with a clear picture of socio-political changes occurring in the dynamic society. A historical study of education transformation in the country points to three types of schooling, reflecting the nature of education at different times: Zoroastrian education (550 B.C. - A.D. 642); Islamic school system education (A.D. 642 - present day); and modern education (1851 - present day).

Nowadays the continuing modernisation of education receives very high attention in the Islamic Republic of Iran, both by the government as well as most of the population. There is evidence of this through the government's effort in making education more and more accessible to the majority of its population. Owing to the changes in government outlook and emphasis, as

well as the state of the country in general, education in Iran too has undergone various stages of development and changes throughout the years. Before the Islamic revolution about 50 per cent of children were unable to attend to school. Only those who were rich and who had easy access to schools were fortunate enough go to school. However, after the Islamic revolution, schooling became more accessible to the majority of the population. Now more and more schools are built not only in the cities or the new housing areas but also more in the rural areas. There is more effort to provide educational help and facilities such as free stationary, school meals and financial aid. These facilities have caused the level of literacy to double. For example, the percentage of literacy in 1976 was 42% but in 1991 had increased to 74.1 %. This is one of the significant achievements of the Iranian government in 17 years. (Whitaker's Almanack, 1996).

Over the last hundred years the Iranian government has made many changes in the system of education. These changes have emphasised the educational goals, principles and levels of schooling. The basis for the present education system is found in the Education Act of 1979 of the Islamic Republic of Iran which is based on religious and moral values and also the preparation of pupils for adult life.

Education in Iran is administered under the Ministry of Education headed by a minister, The Minister of Education, who occupies the top administrative post of the educational system in Iran. Under the minister are various directors of different areas of education such as curriculum development,

examination boards, vocational education, school divisions, teacher education, supervisory division and textbook division (Aziz-zadeh, 1994). Each of these divisions is subdivided into different areas according to different curriculum emphases such as science, maths, arts, technical, vocational and business education as well as other administrative departments.

The educational programme in Iran is divided into the following phases: the General Education System (including kindergarten, primary school, middle school, and secondary school) and the Higher Education level (Figure 2.1 present system).

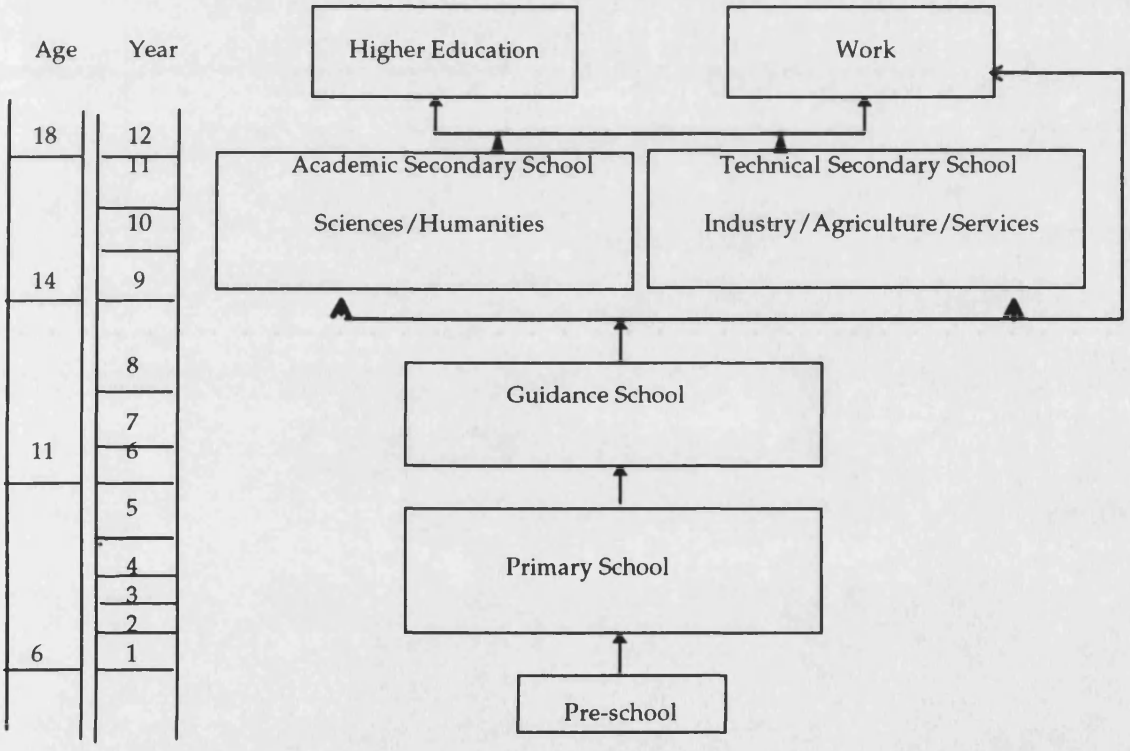


Figure 2.1: The present structure of educational system of Iran
Source: (Redjali, 1990)

2.4.1 Politics and the Goals of the Education System

In 1957, the Ministry of Education declared the following overall goals for education:

1. Physical development: pupils should learn sport and hygiene.
2. Social development: pupils should learn to respect their family, community, and freedom. They must also understand social and economic life and strive to live and work in and for community.
3. Intellectual development: pupils should learn to think, preferably through their own experience.
4. Moral development: pupils should understand the word of religion, culture, and civilisation and by doing this should exercise self control.
5. Aesthetic development: pupils should love nature and strengthen their individuality by enjoying the arts (Redjali, 1990, pp. 365-369).

Following the 1979 revolution, the country emphasised the moral training of individuals in society. The guidelines for schools were based on the principles and teaching of Islam, with great emphasis placed on strengthening and encouraging the faith of Islam. Particular importance was attached to the relationship between education and work. Young people were to be equipped with academic and scientific techniques and work skills in order to make them aware of the need for industrial and agricultural production (Ministry of Education, 1979). The general goals and policies of educational programmes for the future were thus restated as follows:

a: Development of kindergarten instruction in deprived areas;

b: Generalisation of elementary instruction, with special emphasis in rural and deprived areas;

c: Improvement of the quality of instruction in the guidance-cycle;

d: Correlation of secondary education with the economic and social needs of the country, with priority given to technical and vocational education in order to reach the maximum self-sufficiency in technical skills;

e: adoption of a policy of encouragement for the dispatch of the necessary human resource to deprived areas;

f: Adoption of a suitable policy, including encouragement, in order to encourage and attract higher talent to the teaching profession;

g: Utilisation of the maximum manpower presently available in the provinces and cities to meet the requirements of the Ministry of Education;

h: Organisation of professional training and preparatory classes for inexperienced teachers and instructors, and utilisation of more experienced teachers;

i: Revision of the education system and adoption of the most suitable methods of instruction;

j: Adoption of a decentralisation policy in the field of education to correspond to national as well as regional requirements; and

k: Special attention to sport, physical education and recreational activities for the youth at all different levels (UNESCO, 1984, pp.).

2.4.2 The Formal System of Education

According to Article 30 of the Islamic Republic of Iran Constitution, education is free for all children and young adults up to the end of high school and the state is responsible for providing free education for them. The structure of the formal education system is presented in Figure 2.1. The educational system in Iran had, until 1971, a 6-6 organisation (6 years for the primary and 6 years for the secondary schools). This was then changed in the same year to a 5-3-4 for primary, middle, and secondary schools respectively. Under the Educational Acts of 1991, this process has now changed to 5-3-3 for primary, middle, and secondary schools. The country' new education system and its new structure shown in Figure 2.2.

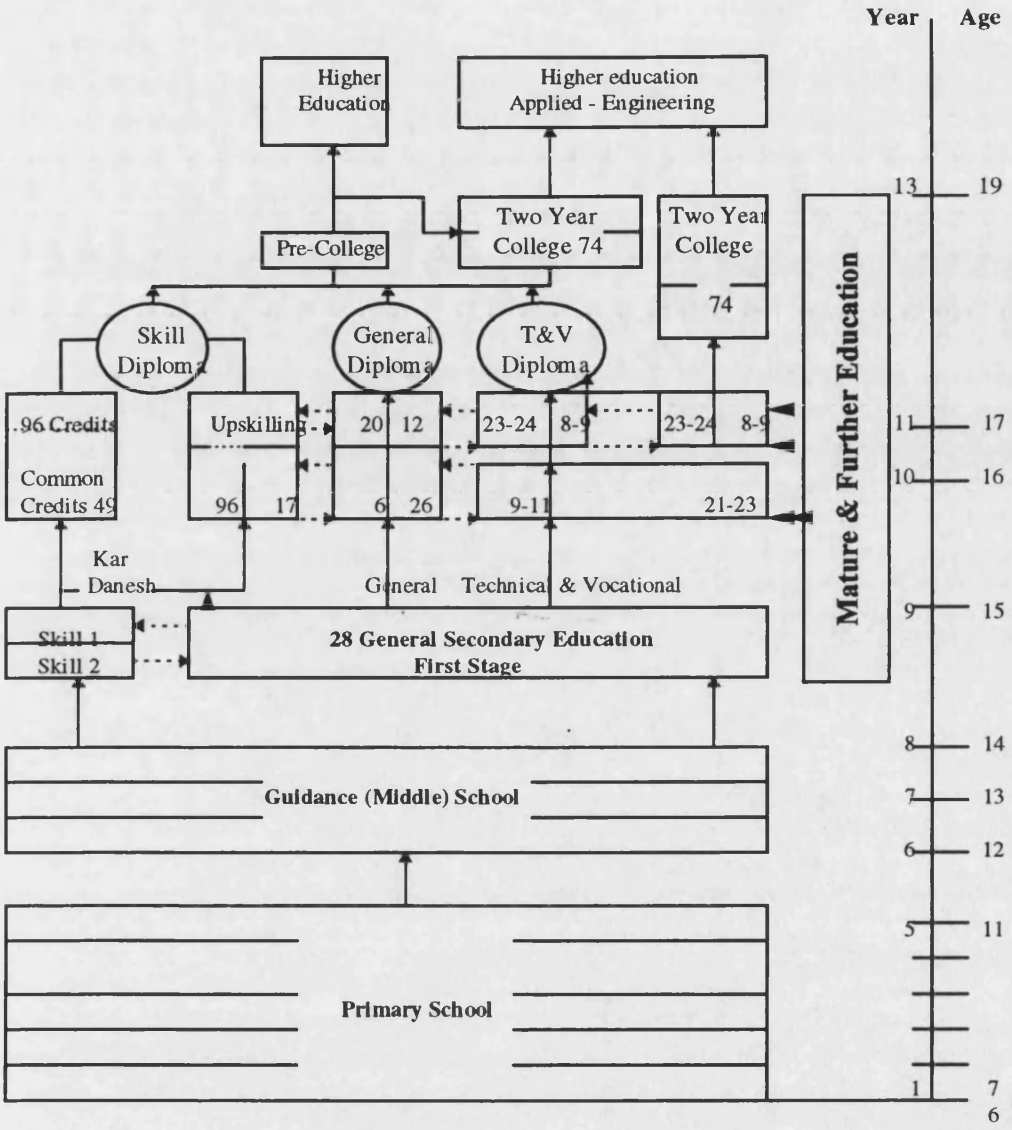


Figure 2.2: *The Structure of the new Educational System of Iran* (**Source:** *ME, 1995).*

A: Pre-primary schools

There are many kindergartens and some nurseries for children aged 4-6 years old at the pre-primary level which are run by state and private institutions in towns. This level is not included the compulsory schooling age. With the Educational Acts 1991, the government has tried to highlight pre-primary education as an official introduction to primary education. The government has expressed its intention to expand this level to economically deprived

regions and to the ethnic minority groups. The one or two years pre-primary education system had 141728 enrolled in 1995.

B: Primary schools

1. Students enter the primary school at age six and stay for five years. Although the government had launched the *"The Compulsory Education, Free, and for All Law"* several years ago, this objective has not been achieved because of the economic problems mentioned earlier. The aim of the primary school is to enable students to read and write, and to have simple arithmetical skills in addition to providing general courses in elementary science, Persian language, religion, geography, history, civics and arts (see Table 2.1). Pupils move from one grade to the next after sitting examinations at the end of each level of schooling. They have to compete for available places at each level. Those who fail to pass an academic year have to repeat a year and try again. Those who are past the primary education age may attend a night school or an adult education centre or leave schooling completely. Generally, the academic year for schools extends from September to June with small variations from one region to another. All schools work between 7 am and 2 pm for 6-days a week with Friday free. In 1995 100% of eligible children have been at primary school. In this period the primary schools' population therefore has increased from 4.3 million to 9.7 million- about 150% growth.

Subjects	*6/7 Year*	*7/8 Year*	*8/9 Year*	*9/10 Year*	*10/11 Year*
Mathematics	*	*	*	*	*
Persian	*	*	*	*	*
Religion	-	*	*	*	*
History	-	-	*	*	*
Science	*	*	*	*	*
Art Drawing...)	*	*	*	*	*
Geography	-	-	*	*	*

Table2.3: *Primary schools' curriculum*

C: Middle (Guidance) schools

Pupils join this level after obtaining the required score at the end of primary education through a standardised national examination across the country. The level takes three years and pupils move from one grade to the next after sitting an examination at the end of each year. The last year examination is an important stage in order to decide which course students should attend in the next level ie, secondary education. The aim of middle school is to enable pupils to distinguish their talents and individual differences. Therefore guidance and counselling is considered a necessary element in this level. In addition to a revision of primary school's subjects, pupils study English, Arabic, and technical and vocational orientation which involve pupils in a range of practical fields (see Table. 2.2). The gross enrolment ratio for guidance school was 92 which has been increased by about 20% since 1990. In this level all pupils will have a reasonable chance to study according to their attitudes and aptitudes.

Subjects	*11/12 years*	*12/13 years*	*13/14 years*
Mathematics	*	*	*
Persian	*	*	*
Arabic	*	*	*
English	-	*	*
History	*	*	*
Science	*	*	*
Geography	*	*	*
Art	*	*	*
Religion	*	*	*
Technical and vocational Education	*	*	*

Table 2.4: *Middle (Guidance) schools' curriculum*

D: Secondary schools

Similarly, entrance to secondary schools is based on the result of students' scores in the final examinations after middle schooling. These results are an important factor in choosing one of the Humanities, Maths, and Sciences paths in the general secondary or several paths in the technical and vocational school. The main purpose of the curriculum is to prepare students in academic streams for higher education, and to prepare students in technical and vocational streams for the world of work (see Table 2.3 and 2.4). In reality most of students usually attend the academic stream even with low scores. The Educational Acts 1991 have focused on the changing of the structure and policies of education in the secondary education level (see Chapter Four).

It is believed that TVE is not popular with students and their parents mainly because it prevents students from going on to universities, and because the academic qualifications required to attend higher education can not be obtained via technical and vocational stream (see Chapter Three). According

to the Ministry of Education Report, in 1991 the rate of enrolment in the upper secondary education is about 43% for boys and 32% for girls; 90% of whom studied in general education and about 10% in vocational courses.

Subjects	14/15 years	15/16 years	16/17 years	17/18 years
Mathematics	*	-	-	-
Persian	*	*	*	*
Arabic	*	*	*	*
English	*	*	*	*
Religion	*	*	*	*
History	*	*	*	*
Geography	*	*	*	*
Logic and Philosophy	-	-	*	*
Economics and Business	*	*	*	*
Statistics	-	*	*	-
Psychology	-	-	*	-
Environmental Education	-	*	-	-
Physical Education	*	*	*	*

Table 2.5: *Secondary schools' curriculum (Humanities)*

Subjects	14/15 years	15/16 years	16/17 years	17/18 years
Mathematics	*	*	*	*
Persian	*	*	*	*
Sciences	*	*	*	*
English	*	*	*	*
Religion	*	*	*	*
Geometry & Trigonometry	*	*	*	*
Biology	*	*	*	*
Chemistry	*	*	*	*
Algebra	*	*	*	*
Physical Education	*	*	*	*
Physics	*	*	*	*
Geology	*	*	*	*

Table 2.6: *Secondary schools' curriculum (Maths & Sciences)*

Except at preparatory school, at the end of all other levels pupils take a standardised national examination which they need to pass in order to continue in the next level. Presently, according to the Minister of Education, at the start of the 1996/97 academic year more than 18,500,000 pupils are

attending pre-college levels (International daily Ettla'at Newspaper, 5th September 96) (see Chapter Three).

2.4.3 National Curriculum

The Iranian National Curriculum is set by the Ministry of Education under the administration of its Curriculum Development Centre. The centre is responsible for all curriculum planning and development for primary, middle (guidance) and secondary education. The Curriculum Development Centre is also responsible for the planning and development of the teacher training colleges which prepare students teacher for teaching at primary and middle school (Aziz-zadeh, 1994).

The central administration of the development and planning of the national curriculum necessitates the formation of various committees not only in terms of the curriculum content but also to some extent curriculum implementation and the supervision of the implementation programme. The centre is made up of various departments with all levels and different subject matters represented. Each subject matter division has its own technical personal and subject matter specialist who normally acts as co-ordinator or secretary to the curriculum committee of that particular subject matter (ME, 1991). Many of these specialists are not only trained in their particular subject areas but also are normally trained and experienced teachers. The other curriculum committee members are normally selected from various related government departments and agencies. The members include subject matter teachers,

educational technologists, lecturers from teacher training colleges and universities, teacher supervisors and representatives from other government agencies offering similar programmes with expertise in the related areas. The curriculum committee under the Ministry of Education is responsible for the planning and the development of the national curriculum of the country. Recommendations are made by these committees to the National Curriculum Committee of the Ministry of Education and subsequently tabled, discussed and passed by parliament and then adopted and implemented nationally (Mohsenpour, 1988).

After the passing of any new curriculum or curriculum changes, the various departments in the ministry are informed for implementation purposes. Those departments include the schools division, teacher training, textbook bureau, supervision, vocational education, teacher placement, educational technology, various subject matter divisions such as languages, science, mathematics, finance as well as the universities are very much involved with teacher training (ME, 1995). For any curriculum changes a minimum transitional period of between two to three years is normally given before full implementation of the new or changed curriculum. The number of the transitional years is dependent upon the extent of the changes and for which stage the changes are made (Mohsenpour, 1988 ; Redjali, 1990 ; Aziz-zadeh, 1994).

2.4.4 Enrolment

As shown in Tables 2.5, 2.6, 2.7, and 2.8 school enrolment has increased sharply since the Second World War. In 1943 the number of students enrolled for primary, middle, general secondary and technical and vocational schools was 237508, 906338 (in 1973), 24682, and 1572 respectively. Today, (1993) the figures are 9862817, 4439971, 2410959, and 273094 respectively. The number of pupils in all of the educational levels in the academic year of 1994-95 is shown in Table 2.9.

Year	*Male*	*Female*	*Total*
1943	172261	65242	237508
1953	533830	212643	746473
1963	1326442	625754	1947196
1973	2348304	1298117	3646421
1983	3468923	2525480	5994403
1993	5215412	4652405	9862817

Table 2.7: *Increase in enrolment in primary education (1943-1993)*
Source: *Development Planning and Designs Co-ordination Department, Ministry of Education 1994.*

Year	*Male*	*Female*	*Total*
1943			
1953			
1963			
1973	576545	330293	906338
1983	1114156	703546	1817653
1993	2496712	1943259	4439971

Table 2.8: *Increase in enrolment in middle school (lower secondary education)* (1943-1993).
Source: *Development Planning and Designs Co-ordination Department, Ministry of Education 1994.*

Year	*Male*	*Female*	*Total*
1943	19177	5510	24682
1953	94168	28855	123523
1963	257401	115441	372842
1973	506830	274710	781540
1983	498004	405091	903095
1993	1317217	1093743	2410959

Table 2.9: *Increase in enrolment in general secondary education (1943-1993).*
Source: *Development Planning and Designs Co-ordination Department, Ministry of Education 1994.*

Year	Male	Female	Total
1943	1572	0	1572
1953	639	148	787
1963	8927	1540	10467
1973	57650	12032	69682
1983	121536	26229	147765
1993	215546	57548	273094

Table 2.10: *Increase in enrolment in technical and vocational education (1943-1993).*
Source: *Development Planning and Designs Co-ordination Department, Ministry of Education 1994.*

educational level	student		
	Total	Male	Female
school for exception children	55189	33489	21700
preparatory school	141728	73946	67782
primary school	9745600	5151547	4594053
orientation school	4712028	2621635	2092393
general secondary school	1894568	1007677	886891
technical & vocational school	228241	178811	49430
rural teacher training colleges 2&4 yrs	21210	13605	7605
teacher training centres	51731	27152	24579
adult Education	165985	105487	60498
night school: primary & secondary	96597	56073	40524
new secondary system daily	796782	428970	367812
total	18031594	9770665	8361939

Table 2.11: *No. of students for academic year 1994-1995.*
Source: The Ministry of Education, 1995.

2.4.5 Problems of education

The first Development Plan (1989) outlines the shortcomings of the education system in the context of socio-economic development and offers guidelines for educational reform accordingly (Mehran, 1994). It notes that the educational system is faced with the following problems which may continue for many years:

The first problem is that its aim to have a universal primary education by 1990 has not been achieved because of the economic condition of the country. Another major reason for that is the rapid and increasing rate of growth at school age children (5% per year). The number of school children rose from 8,258,578 in 1979 to 12,818,036 in 1988.

The second problem is the shortage of well-trained teachers. The rapid expansion in the number of schools has not been followed by the necessary expansion in teacher training institutions. There is a lack of sufficient educational facilities and specialised teachers despite an annual growth rate of 7.5% in educational expenditures.

The third problem is the limited educational access for school age children especially at higher levels and among girls.

The fourth problem is the lack of relationship between the goals and principles of education in present day Iran, and the world view and educational philosophy of Islam. The Education Plan states the lack of perfect fit between post-revolutionary educational principles and the teachings of Islam as the number one shortcoming of education in the country. On the other hand education in Iran is not up-to-date in accordance with international educational innovations.

The fifth problem is the lack of relationship between the post-revolutionary content of education and the post-revolutionary needs of society. Since the Islamic Revolution many changes have taken place in the country in different aspects of the economy, politics , and social attitudes. The educational system has not been very responsive to those changes.

The sixth problem is a high level of centralisation that has led to a disregard for regional, geographical, cultural, and linguistic differences throughout the nation. Such total centralisation of education, in existence since 1911, and a

strict pyramid of authority, with the Ministry at the top and principals and teachers at the bottom, has led to a rigid system marked by lack of dynamism. By denying the teachers, parents, and other members of the community the right to participate in the decision-making process, the Iranian educational system has become unresponsive to local needs.

The seventh problem is the lowered standards in the selection and training of teachers, so that only low-ranking high school graduates are attracted to teacher training institutions.

The eighth problem is the high rate of drop-outs because the educational planners were thinking only about the quantitative expansion in their attempts to achieve universal education. This objective was at the expense of the quality of education, where class size and student/teacher ratio were highly affected. As a result, primary school students who are not able to continue their education are equipped with no marketable skills (Aminfar, 1988). Because of this, it has been necessary to think about new types of education. In the 1984-85 academic year, drop-out rates were high: 34.7% of pupils finishing the five-year primary education level did not enrol in the middle level, and 56.4% of those who finished the three-year middle school did not attend high school (Islamic Republic of Iran, 1989, pp. 18-28).

The next problem concerns the lack of appropriate learning strategies. Teaching is basically composed of giving lectures with minimum class discussion. Overcrowding in the classrooms also leads to poor teacher-

student interaction. Rote learning, recitation, and memorisation are the dominant forms of learning in Iranian schools, with little laboratory work or use of audio-visual facilities (Mehran, 1992 , 1994).

The tenth problem concerns the curriculum development and whether it should be unified or decentralised. This is particularly acute as Iran is a country with different ethnic groups with distinct cultures.

Finally, there is the problem that most secondary schools provide a form of academic education. In 1995, the proportion of secondary students in vocational and technical schools was only 9%. This level is a problem for the government. With increasing numbers of applicants for higher education, high unemployment amongst school-leavers, the lack of relationship between education and the labour market, the lack of sufficient skills and applied knowledge and a high emphasis on academic-based courses, have forced the government to put reform of secondary education as the first priority in the 1991 Education Act (ME, 1995a).

Additionally, at the transfer point from middle schools to secondary schools there are many problems:

- In practice, fewer than 50% of middle school leavers have the opportunity to go to secondary schools. The rate for girls is much less.

- Pupils following vocational and technical courses are often not able to compete with pupils following academic courses for the limited places in post-secondary institutions. There are two reasons: firstly less

academically able pupils are selected for vocational and technical schools; and secondly, these courses are not well-equipped with academic subjects.

- Although the opinions of the school counsellor about pupils' performance in this stage is considered as an important factor, it is still the final examination results at the end of middle schooling which are the only means used to assess pupils' suitability for academic or vocational and technical schools.

CHAPTER THREE

EDUCATION AND THE ECONOMY

3.1 Introduction

The literature review revealed little research about the Iranian educational system, particularly secondary education. Therefore, more precisely related literature in the field of schooling for the world of work in Iran and from other developing countries and UNESCO documents has been reviewed. The literature from industrialised countries and OECD documents, in order to gain insight about different policies and approaches concerning the question fo how their schooling system prepares students for the world of work and how they link educational systems to economic and business sectors, has also been reviewed.

However, in this literature I have tried to address all possible issues regarding the research topic. Therefore, the mode of review is from general to particular points. For example, this will address issues like 'education-economic links' in the beginning and the structure of secondary education in Iran at the end.

3.2 Education and Economy Links

From the very early industrialised life of humans , the relationship between education and the economy as two essential sectors of society has been considered by economists. Among them, Adam Smith, John Maynard

Keynes, Alfred Marshal, and more recently, educational economists like Becker, Shultz and their colleagues in the late 1950s and the early 1960s, have raised the question of the importance of education to economic development. International studies and figures have indicated a direct relationship between economic development and educational improvement (Psacharopoulos, 1988; OECD, 1994). The level and quality of education in developed countries is higher than developing countries. In this connection, a question will be raised which is: does the level of education in these countries affect the economic growth, or does economic development affect education? The interrelation between the educational goals represented and practised in schools and the demands made on school education by the world of work has a long history. "It can be traced back to the period when the first schools were founded" (Feuzat, 1978).

This interrelation can be interpreted as a continuous sequence of controversies pointing to the social and economic functions of school throughout the various periods. Mitter (1978) has pointed out two different views or philosophies about the relationship between education and industry which still affect the educational policies of many societies. These aspects are: has school been primarily established as a place to teach the adolescents abilities and skills necessary for their subsequent vocational career? Or, rather, has it been the essential function of school to protect the youngster from the harmful and dangerous influences of the "world of work" as long as this is considered possible and justifiable? To prevent misunderstandings, these two controversial philosophies have never been conceived as absolute

dichotomies nor have the structure and content of school practice been totally subjected to goals underlying these philosophies.

It seems recent progress in the collaboration between education and economy, or what is called in many countries 'co-operative education' perhaps is the result of the acceptance of the importance at all stages of linking the process of learning to practical application, preferably at a considerable remove from the classrooms (Linklater, 1987). This movement can be considered in both secondary and higher education.

As a characteristic of North West Europe e.g. Germany, Netherlands, Sweden, France, and United Kingdom, the practice of linking the place of learning to the place of work stems from a long tradition of collaboration between secondary schools and the wider community. (Partee et al, 1994; Brown and Behrens, 1996). And also there is a strong belief in North America in the value of post-experience professional education (Daggett, 1992). However, in the historical linking of education and economy, economists on the one hand, have tried to explain the role of education in economic growth. And on other hand, they have wanted to determine a kind of education which can be more effective in economic development. Klees (1986) as an educational economist, says:

> In education, for example, all of a sudden the conventional wisdom seems to be arguing that we know some policies that are best, in most contexts, world-wide: that primary education is the best investment; that improving the quality of education, especially at lower schooling levels, is more efficient than expanding access; that general education is better than vocational education; or that management is our key development problem and substantial privatisation the answer." (pp. 604-605).

Economic changes in different ways have affected the nature of skills which might be developed in young people by the education and training system. The comparison between Fordism and post-Fordism stages (Figure. 3.1) in developed countries and the nature of required skills and abilities shows two different meanings and shapes of skills: 'old skills' and 'new skills'. Probably, dramatic economic changes may force educational institutions into creating new forms of skills, abilities, and attitudes for the changing demands of the economy. It seems that these changes have provoked educational policy makers to restructure educational system in an attempt to raise educational standards. The clarifying of differences between old and new form of skills is important for policy makers to direct educational changes.

Although, many educationalists still interpret skills in terms of old meanings, new meanings of skill can be said to include knowledge and cognitive elements which were not part of the old meaning of skill. The main differences between 'old' and 'new' skills, according to Paczuska (1996) are:

1. Where old skills divided the working population into skilled and unskilled, new skills call for a higher level of general skills across the working population as a whole to provide a starting point for learning new skills. These general or core skills include basic educational achievements such as numeracy and communication, and include the ability to use information technology and speak another modern language;

2. Where old ideas of skill were based on job categories, new skills emphasise the need for flexibility to enable moves from one job to another. This

requirement for flexibility is expressed in the notion of transferable skills; skills such as problem solving and interpersonal skills which it is believed are portable from one context to another; and

3. Where old skills were associated with manual dexterity and technical ability, new skills are associated with intellectual knowledge and ability (pp. 9-10).

In this section I review the evidence on the economic impact of education produced in the past thirty years and compile a number of lessons from literature that might be useful to policy makers.

Fordism	Post-Fordism
Economy competition and production process	
Protected national markets	Global competition
Mass production of standardised products	Flexible production systems/small batch/niche markets
Bureaucratic hierarchical organisation	Flatter and flexible organisational structures
Compete by full capacity utilisation and cost-cutting	Compete by innovation, diversification, sub-contracting
Labour	
Fragmented and standardised work tasks	Flexible specialisation/multi-skilled workers
Low-trust/low discretion Majority employed in manufacturing sector/'blue collar' jobs	High-trust/high-discretion Majority employed in service sector/'white collar' jobs
Little 'on the job' training Little formal education required for most jobs	Regular 'on the job' training Greater demand for 'knowledgeable' workers
Small managerial and professional elite	Growing managerial and professional class/services class
Fairly predictable labour market histories	Unpredictable labour market histories due to technological change and increased economic uncertainty
Politics and ideology	
Trade union solidarity	Decline in trade union membership
Class-based political affiliation	Declining significance of class-based politics
Importance of locality/class/ gender-based lifestyles	Fragmentation and pluralism 'global village'
Mass consumption of consumer durable	Individualised consumption/consumer choice

Table 3.1: *Characteristics of Fordism and post-Fordism.*
Source: *Brown and Lauder (1992), p. 4.*

Human resource-rich countries have demonstrated that they can develop even if they are poor in natural resources. The very good examples of this are Japan and Germany which since 1945 started with very little. For this reason, improvement in the quality of people as productive agents has been a central objective of development policies. And for this reason, the economic important of education has always been emphasised by economists. For example, Alfred Marshal declared "...Knowledge is our most powerful engine of production; it enables us to subdue nature and satisfy our wants." Theodore Schultz stated that "while agricultural development is of paramount importance, the decisive factors of production in improving the welfare of poor people are not space, energy, and crop land; the decisive factor is the improvement in population quality" (quoted in Emadzadeh, 1995, p. 27).

However, this research focuses on the human capital dimension, in which education is seen as a process that improves people's skills and abilities, and therefore their productivity in the workplace. Thus, to the extent that it raises the skills of workforces, and therefore productivity, greater educational attainment seems to increase an economy's output of goods and services and more generally, to contribute to the process of economy development.

3.2.1 Education And Economic Productivity

> "Most successful economies over the past two decades have given a high priority to education, skills and training as vital factors in their economic success." (The Australian Minister for Employment, Education and Training, quoted in Ashton and Green, 1996, p.11).
>
> "The future now belongs to societies that organise themselves for learning. What we know and can do holds the key to economic progress just as command of natural resources once did. ....The prize will go to those countries that are organised as

> national learning systems, and where all institutions are organised to learn and to act on what they learn" (Marshall and Tucker, 1992, p. xiii).

There is an increasing body of evidence which links investment in education and training to improved economic performance. This ranges from detailed studies of comparative training in various European countries, for example Prais (1981, 1989), to much more general studies of the role of education and training in economic growth process (Romer, 1986; Solow, 1991). In the production process at least four factors have essential roles in which a reactive condition affect each other. These factors which were developed by Neo-classical economists (Becker, 1975), has been identified in the following equation:

$$Y = f(K, L, T, Q)$$

Y = output produced.
K= physical capital.
L = labour services.
T= technical progress.
Q= labour quality or human capital in addition to labour services.

In analysing these factors, at least two of them probably involve education. Education seems to affect the structure of technology and to improve its performance by preparing people to use it. In other words, although, in the post-Fordist era economic productivity depends on many factors as well as new economic restructuring, educational organisations likely will have a noticeable role in this process. Thus, education's contribution to economic productivity possibly can be seen by the preparation of young people who are creative, capable, and have a range of flexible skills .

The importance of labour force quality as a determinant of aggregate economic growth is recognisable. Productivity and income levels are highly

correlated with levels of educational attainment and professional skills. However, developing precise estimates of the contribution has many problems. First, it is far from clear how skills and competencies might be best be defined and measured. Different types of education and training have differential impacts on economic performance and developing a common index itself presupposes information on their relative weights. Second, the mechanisms through which skills might affect economic performance are complex and varied. They are also conditioned by the availability and quality of other factors of production and by contextual economic and social conditions. To take full account of these inter-relationships poses a very difficult task for empirical analysis. Finally, economic performance itself has many facets. It might be considered alternatively in terms of the level or rate of change of output, or of productivity and living standards; there is also the question of choice of time horizon over which to assess performance (OECD, 1994).

In going beyond the neo-classical framework, several authors have argued that education levels are indigenously linked to productivity growth (Figure 3.1). The argument here is that, in general, an educated, motivated and flexible labour force most likely will be able to adapt more easily to new processes and new techniques and hence allow productivity to rise more rapidly. Moreover, in models such as those developed by Romer (1986, 1990) highly-educated individuals play a key role in the sector of the economy that creates new technology which, in turn, is closely related to the share of R&D in total output. The flow of new technology and productivity growth seems

to be linked to this share (OECD, 1994). There may also be positive externalities from human capital: where the average level of human capital is high, the incidence of learning from others will be higher, and it is likely that there will be greater productivity gains derived from exchanging ideas (Lucas, 1988).

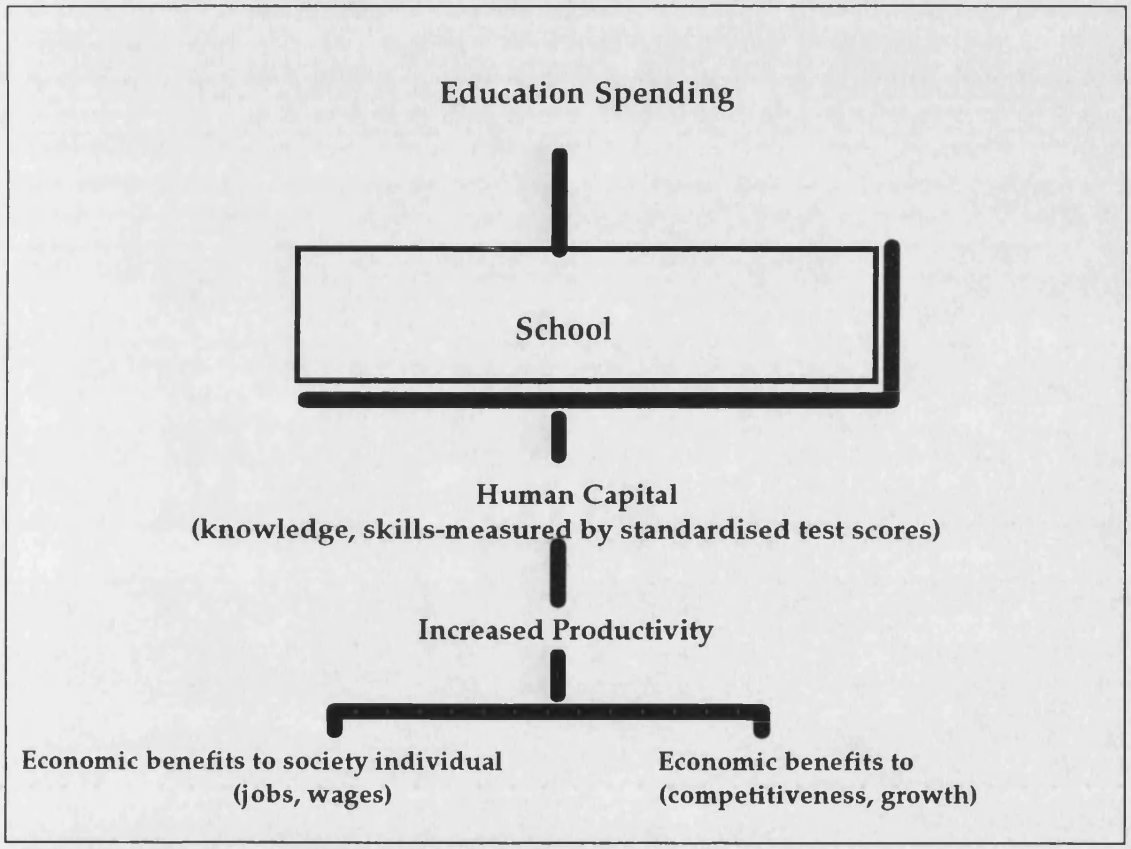
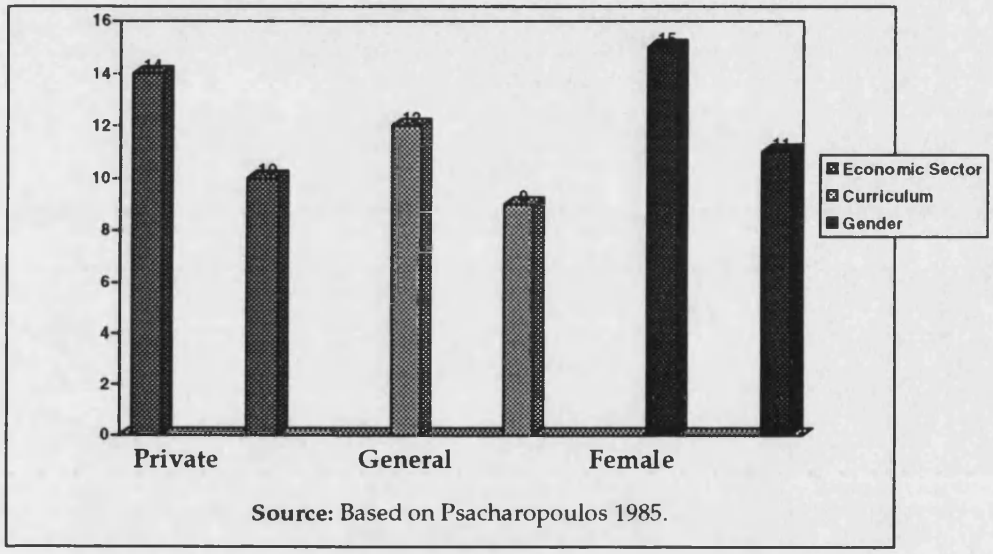


Figure 3.1: *The Education Spending/Economic Development Link*
Source: NEA (1995)

3.2.1.3 Some Empirical Results

The evidence on the economic effects of education can be divided into two distinct types: micro and macro. At the micro level, the rate of return to investment in education is addressed. While at the macro level, if investment in education yields returns at the individual or social level, this might be reflected at the level of economy (Meier, 1995).

If educational expenditure is considered as a kind of investment, there are several ways to assess rates of return to education. The calculating of this rate can be done by the individual rate of return or societal rate; the private or public rate of return; type of curriculum-general or vocational secondary education; type of economic sector and or by gender (Psacharopoulos, 1991). In this specific field, Psacharopoulos' works have summarised hundreds of studies which have been conducted in the past thirty years on the profitability of investment in education in a large number of countries across the dimensions cited above.



Source: Based on Psacharopoulos 1985.

Figure 3.2: *The returns to education by economic sector, curriculum type, and gender.*

The important point in the figure 3.2 is that the rate of return to secondary schooling or higher education is much higher than vocational education. Psacharopoulos (1985) has argued that this is because of two factors. First, the unit cost of vocational education, at any level, is higher than that of general education. Because vocational education entails more specialised faculty and equipment. Second, graduates of general programmes seem to be

more flexible in fitting a wide spectrum of occupations, and so perhaps are more easily trained on the job, rather than people with vocational backgrounds who are earmarked to enter a particular occupation. In other words a more general curriculum probably leads to the higher rate of returns to education.

Therefore, despite the limitations of economic growth studies, they still provide useful benchmarks for the contribution of education to economic growth. There are several good surveys of this vast literature, the most recent being Englander and Gurney (1994). One study, covering 29 countries and five continents, found estimates of the role of education in accounting for economic growth ranging from only one per cent in Mexico to 25 per cent in United States (Psacharopoulos, 1984 pp. 340-46). Similar findings are reported by Bowman (1970). Englander and Gurney (1994) cite 24 studies covering seven OECD countries which show the estimates for education's share in output growth in these studies range from three to 27 per cent.

Several empirical studies have been conducted in the tradition of "the new growth economics". One cross-country study of 98 countries finds that the education variable, measured as the proportion of the working-age population enrolled in secondary school, contributes positively to productivity levels (Mankiw et al, 1992). Another study (Barro, 1991) examines the average growth rate of real GDP per capita between 1960 and 1985 for 98 countries. The set of explanatory variables includes two measures of the human capital stock, the 1960 enrolment rates in primary and

secondary education, respectively. The regression analysis produces statistically significant coefficients for both education variables.

However, it is possible to conclude that skills and competencies of the labour force are significant determinants of measured economic growth and productivity performance. But the results of these analysis indicate that investment in education and training does not simply generate economic benefits for the individuals undertaking education and training. It also confers benefits for the economy and society in the form of higher output and productivity growth (OECD, 1994). However, reviews on the effects of education and training on labour market experience have highlighted four important findings which are:

1. people with a higher level of education and training most likely receive higher earnings. And it seems that the most pronounced disparity occurs between those who have completed upper secondary schooling and who have not (OECD, 1993);

2. there is a positive correlation between low levels of educational attainment and unemployment rates. Those who failed to complete upper secondary education or otherwise acquire suitable vocational qualifications are most likely at risk of becoming unemployed (OECD, 1989);

3. there is some evidence that the earnings gap has widened over the last two decades. While very low levels of attainment are consistently associated

with low relative earnings, the gap is more variable in its size and changes over time at other levels of educational attainment; and

4. Generally, better-educated workers seem to enjoy more opportunities for formal training within the firm, which can imply widened occupational horizons and increased earnings (OECD, 1994).

Does education really improve economic (workers) productivity? The usual explanation for the positive association between educational attainment and individual success in labour markets probably is that schooling contributes to the development of productive skills and knowledge. However, another interpretation is education simply serves as a mechanism for selecting individuals who are inherently more productive, or of a certain social background and certifying their ability to employers (Berg, 1970; Arrow, 1973; Spence, 1973; Stiglitz, 1975). This particular view has itself been attacked theoretically and empirically. In theory, as Arrow (1973) pointed out, if ability is multi-dimensional, then schools might play a productive role by helping people sort themselves into jobs that use their particular abilities, even if schools did not augment those abilities (Willis and Rosen, 1979; Garen, 1985). More direct empirical evidence of education's role in productivity has compared the returns to schooling among self-employed individuals with the returns for wage and salary earners (Tucker, 1985; Grubb, 1993). These studies have indicated that rates of return to education are at least as high among self-employed workers, showing that schooling does share in economic productivity and is not merely a screening device.

Also, Ingham (1995) in his review on studies around the world, about variables which affect performance of the economy, has highlighted that when education is measured as the percentage of school enrolment rate, it is significantly related to income distribution. High school enrolment rates are strongly associated with a more equal distribution of income. Another study (Brown et al, 1993), adopting a different approach, examined the role of human resource variables that included training for a group of American firms. In explaining 'productivity' definition, they revealed a 'high performance work organisation' is featuring a capacity for problem-solving, and continuous improvement of products and production. They also found that training and the ability of employees to function in different tasks were important determinants of viability of high performance work organisations.

Although education, in some cases, may serve more to screen for "inherent" productivity than to actually enhance productivity, the conclusion for the purpose of policy is that it likely does enhance productivity. "This effect appears stronger with respect to lower levels of educational attainment, and diminishes at higher levels. Education does this, evidently, by providing knowledge and skills that can be used at work, improving the ability of individuals to communicate and co-ordinate, and better enabling them to learn new tasks and to acquire new information" (Middleton, et al., 1993, pp. 42-43). As a result, there is a tendency to say that the creation of new educational and training programmes is a significant positive predictor of productivity change. This seems to show thst the level and distribution of

skills and competencies in a nation's population and labour force have important consequences for economic efficiency (OECD, 1994 ; Bartel, 1994).

While these studies make a strong basis for investment in education and training in order to secure and improve the long-term prospects for economic performance, they are not very helpful in giving advice on how to choose precisely what forms the education and training should be taken. The need for flexibility, multiskilling, the importance of information technology-related skills, employability and a positive personal attitudes to work are certain themes which have been highlighted by employers and modern business studies. The bottom line, however, is that each programme of education and training needs to be assessed on its own merits. Investing in such programmes in the hope that they will generate the sort of virtuous circles which has been highlighted by Prais and Romer, can be easily criticised. Indeed, formative monitoring is essential to ensure that the types of education and training being provided meet real needs. If a system is being made on such bases, of course, some economic benefits can be imagined (Wilson, 1995, p.29-30).

3.2.2 Human Capital's Role In Economic Growth

The importance of the human factor in technologically advanced economies is nowadays acknowledged by many researchers in both education and economy. The skills and qualifications of workers are viewed as critical determinants of effective performance on the part of companies which have to invest more and more in human capital in order to maintain competitive

position in rapidly changing world markets. Hence, the heightened sensitivity of the business community to educational deficiencies. Thus, if a society is to stay competitive in a global economy, it is the duty of its managers to pay more attention than in the past to the qualities possessed by its labour force. High quality goods and services possibly can be produced by a workforce with high quality knowledge and skills. And it is also the duty of the basic education system to strive for better quality teaching, materials and curricula. Therefore the educational aim perhaps is to achieve a better balance between general studies and work-oriented training and keep abreast of innovations in the outside world.

The early explanations of the concept of human capital argued that education or training raised the productivity of workers, and hence, increased their lifetime earnings, by imparting useful knowledge and skills. Although, this concept was attacked soon after by critics (Braverman, 1974) who believed that education does not improve productivity by imparting necessary knowledge and skills. They were arguing education simply acts as a screening device, which enable employers to identify individuals who possess either superior innate ability, or certain personal characteristics, such as attitudes towards authority, punctuality, or motivation, which employers value and which are therefore rewarded by means of higher earnings (Woodhall, 1987 ; Emadzadeh, 1995). But the fact that employers continue to pay educated workers more than uneducated throughout their working lives, seems to refute this (Psacharopoulos, 1979). Woodhall (1997) argues:

> even if the new version of this argument -*Screening Hypothesis*- is rejected, and it is difficult to see why no cheaper means of identifying workers with desired characteristics has not been developed, if education really had no effect on productivity, it is nevertheless true that the idea of education has been important in influencing recent directions in research in the economics of education (p.33).

Blaug (1976) in reconsidering the empirical status of human capital theory, has predicted that, in time, the screening hypothesis will be considered again. Possibly it will mark a turning point in the 'human investment revolution in economic thought', a turning point to a remarkable position.

As Woodhall (1997) says, because of focusing attention on the precise way in which education or other forms of investment in human capital influence productivity, the 'screening hypothesis is important. Also it is serving as a reminder that education does far more than impart knowledge and skills. So the reason why employers continue to prefer educated workers probably are: first, that the possession of an educational qualification indicate that an individual has certain abilities, aptitudes, and attitudes. Second, the educational process helps to shape and develop those attributes. In other words, it is now a tendency to recognise that education both provides knowledge and skills, and affects attitudes, motivation, and other personal characteristics which influence the productivity of people at work.

It seems that the concept of 'human capital' investment in people's abilities and attitudes is still valid. And also it could be considered comprehensively to cover all aspects and activities which affect personal attributes as well as skills, and it must recognise that such activities increase workers' productivity in various ways. The equation at the heart of the discourse as Stronach (1989) pointed out is this:

good education/training = higher worker productivity = economic success

But, the gaps and uncertainties in the above linkages are still legion. A lot of studies have criticised those theories which explain this equation such as Human Capital Theory. Stronach (1989) has summarised most existing critics as follows. First, the economic science behind these connections is hopelessly fragmented between monetarist, neo-Keynesian, and neo-classical paradigms. Second, the enquiry logic is fundamentally partial. These studies highlight how economic explanations tend to explain what they can in economic terms like investment, and then to attribute remaining discrepancies to an unexplained set of 'residual differences'. Third, quantitative evaluations of the relation of education/training to economic growth are controversial and imprecise. But researchers are still at a loss to explain the real dynamics of economic growth, and the spectre of an uncomfortably large residual persists. Fourth, evaluation conclusions from programmes that try to connect education to economic outcome are indecisive. And finally, the methodologies behind these confident assertions of deficiency and remedy suggest an uncertain science of weak and highly mediated correlation between factors which do not necessarily make much sense as separate variables, and whose national 'cases' are neither comparable, nor independent of each other.

However, it seems that formal and informal education and training in both the modern and the traditional sectors are necessary for the development of human resources. Cost-benefit analysis of the "returns" to education must

incorporate the interactions between education and the economy. There is a tendency to give a particular attention to education as an investment, the importance of rural education in a developing economy, and the interdependence of education, human resource requirements, and development. So as far as researches have indicated individuals commonly view their education as a consumption good, but it is more appropriately viewed from the standpoint of the economy as an investment good. Because, for economists human beings can be conceptualised as human capital or embodied savings.

The several purposes of education, therefore, have received differing emphasis over time. Both as a consequence and a cause of the development of human capital theory, the weight given to the economic dimension of education has grown. Education has widely come to be seen as an aid to the achievement of individuals' economic ambitions and / or national economic and social objectives as determined by the state. This has been the case in educational debates in both developing countries and those developed countries where large numbers of young people are unemployed.

3.2.3 Education And (Un)Employment

Making education relevant to world of work in both schools and out of school schemes (training programmes), is one of the crucial matters for official bodies in most societies. The range of investment in education and the range of researches and studies which try to improve the quality of education in both state and private organisations shows that education has a key role in

directing societies' development process towards its purposes. Particularly in terms of youth preparation for employment, education has been recognised as an effective factor. And also in attempts to bring down the unemployment rate amongst young people where it has been caused by the lack of required skills, making education more relevant to economic needs is essential and has been a strongly pursued policy objective. Thus, if it is asked why are attempts to make education more relevant to the economy and more closely related to vocations and employment requirements, there seem to be two main answers: decreasing of youth unemployment and increasing economic benefits for both individuals and society(Blaug 1973; Carnoy, 1977 ; Dore and Oxenham, 1984 ; UNESCO, 1991).

Unemployment amongst educated people will appear in different forms and stage of their lives. As Dore and Oxenham (1984) have pointed out "in the early years of school system unemployment appeared among primary school graduates-those with between five and seven years of schooling. Later it includes those with junior secondary, or eight or nine years of education. Then it began to affect secondary school-leavers and eventually even university graduates" (p. 5). Two additional phenomena frequently aggravate the frustration over the situation. First, in many countries natural resources and other opportunities for productive livelihoods lie unused, at the same time as many educated people are without work. This problem in developing countries is more strong. As the former President of the World Bank in his message has highlighted it:

> developing countries have greatly expanded their educational systems over the past quarter century. But much of the expansion has been misdirected. The results are

> seen in one of the most disturbing paradoxes of our time: while millions of people from among the educated are unemployed, millions of jobs are waiting to be done because people with the right education, training and skills cannot be found (quoted in Fresh, 1979, p.10).

According to results of studies during 1982 to 1988 youth unemployment rates were running between 8% - 9% in Japan and Germany to about fourteen per cent in United Kingdom. This rate is above 20 per cent in Iran. Secondly, in a number of countries educated unemployment coexists with acute shortages of skilled manpower, so immigrants have to be imported to do critical jobs even while local people are jobless. A consequential and natural feeling is that there might be something wrong with education. If only it could be put right, unemployment of the educated may not exist seriously and productive opportunities would be better utilised - and the risk of political disturbance allayed (Dore and Oxenham , 1984; Jackson, 1985 ; Brown and Ashton, 1987 ; Hart, 1988 ; Ministry of Labour of Iran, 1996).

As a consequence of this situation in Britain, James Callaghan's Speech at Ruskin College in 1976 questioned both the goals and process of modern English education and in particular criticised the poor relationship between schools and industry. Briefly, he questioned the very function of education by clarifying this point that schools were unable to provide the necessary skills; he claimed:

> "I am concerned to find complaints from industry that new recruits from the schools sometimes do not have the basic tools to do the job..". "There is no virtue in producing socially well adjusted members of society who are unemployed because they do not have the skills (Reported in the Times, 18.10. 76).

These points were the very important points from his speech which have had a great influence on debates of education since that time in the UK. The first major point, was that one of the key causes in the rise of unemployment is

the shortage of relevant and required skills. He concluded a balanced equation which indicate the relationship between education and unemployment. Indeed he believed education as an instrument should provide 'relevant and necessary skills' for reducing unemployment. The other implication which has strongly affected the development of pre-vocational education was that a range of 'relevant' or 'necessary skills' exist which would make students more employable. In his words, education must provide the 'basic tools to do the job' (Wellington, 1989).

The impact of unemployment on education can be divided into four stages:

1. The implicit promise in schooling (i.e. 'work hard at school to get a job after it') is undermined.
2. The direction and traditional function of schooling and education is questioned.
3. Education, training and 'pre-vocational education' are increasingly seen as an instrument to respond to youth unemployment.
4. The bonds between education and employment are tightened. (Wellington, 1989, p. 3).

Therefore, to improve youth employment, the activities implemented in some Asian countries like Japan, South Korea and Singapore have been highly effective in helping: (i) "to achieve the provision of learning experience at workplace for out-of-school young people and to facilitate the movement from work into education and vice versa; (ii) the promotion of educational forms, methods and structures which incorporate work skills in general education, in order to equip education for the world of work; and (iii) the furthering of national efforts for introducing work as an integral part of general education and the inculcation of employable skills in school leavers to respond to changing needs of technological development" (UNESCO, 1991, p. 29).

3.2.3.3 Full Employment And Economic Expansion

Those who have failed to complete upper secondary education or otherwise acquire suitable vocational qualifications are probably most at risk of becoming unemployed. Although higher levels of educational attainment generally are associated with lower levels of unemployment, this relationship is most widely observed with regard to lower levels of educational attainment. Moreover, the evidence reported by OECD (1994) about a number of countries also suggests that the relationship between low attainment and higher unemployment rates is becoming stronger over time, with the least educated suffering more in the late 1980s than in the late 1970s.

The expected relationship between educational attainment and unemployment is ambiguous. On the one hand, higher levels of educational attainment are likely to enhance a person's position in the unemployment queue. On the other hand, the skills and competencies of highly qualified persons may be too specialised to be readily transferable; highly qualified people may also hold out longer for better-paid jobs. So the balance between these factors may determine the nature of the relationship between education and unemployment in any economic system (OECD, 1989).

A shortage of qualified workforces, at least in some sectors, exists in all countries, without exception. This is not to be wondered at: technology is constantly advancing, creating sudden new requirements which, even if all the appropriate measures were adopted, would take some years to meet. However, according to Carnoy (1977), it can be assumed that there is a

connection between the causes of unemployment, and inefficiency in public investment is a principal determinant of educational unemployment or underemployment. With this assumption, as he has highlighted the schooling system can be blamed for unemployment in the following ways:

1. hastening the movement from countryside to city by providing a general education in rural areas which is useless for increasing agricultural production but increases expectations for work and income which can be met in rural areas;
2. overschooling people relative to the jobs they can get, so that they effectively stay out of the labour force for long periods of time rather than accept work beneath their expectation; and
3. Misschooling people so that they can not find jobs related to their school-learnt skills (Carnoy, 1977, P. 22-23).

The educational policy makers, therefore, may contribute to decreasing educated unemployment by (a) creating lower-cost education suitable for a great number of low-level jobs in the economy (particularly rural jobs), thus reducing or changing expectations of school leavers; (b) reducing the number of graduates emerging from educational institutions; and (c) performing (through planning) a better match between higher-level skills needed in the economy and skills taught in schools (Emmerij, 1972; Blaug 1973).

Although, 'the rise in youth unemployment means that many young people are losing skills or employability' (OECD, 1994. p. 41), the causes of youth unemployment are multi-faceted and complex. Bynner (1996) pays attention to individual factors causing unemployment and stresses the importance of basic and work-related skills for the occupational trajectories. In his view education contributes not only to the human capital of an individual but, even more importantly, provides a skilled individual in a society full of risk. The role of education and training in resisting unemployment is more as a

protector of young people than as a guarantor of entry to employment (de Goede, et al. 1996).

Drawing on comparative data collected on young people's transition to employment in England and Germany, Bynner (1990) develops the argument that education both serves labour market needs in enabling employers to select people for jobs, and contributes to its transformation through the skills brought into employment and the demands the newly educated place on the products of industry. Fundamental to these functions is acquisition of the basic skills of literacy and numeracy, the absence of which likely jeopardises prospects of employment in industrial societies. Maybe education and training alone can not guard against unemployment either at the macro or micro level but, the results of studies argue, in the world of modern employment, where generically transferable skills and re-learning at regular intervals increasingly characterise occupational careers, they provide the critical elements of survival and progression in hostile and changeable economic conditions. Their effects are demonstrated differentially across different societies, different labour markets and different regions. Logically, adequate education is not merely a sufficient but a necessary condition for getting and holding a job.

In almost all countries with a high rate of youth unemployment, of course, there is a special employment policy for unemployed young people aimed at reducing the unemployment rate and preventing the considerable economic and personal waste as a consequence of unemployment (de Goede, et al.

1996). If unemployment implies a considerable economic, social and individual waste (Alexander, 1996), then one of the claims frequently made may be that the problems of youth unemployment are in large measure a reflection of faults in the educational system. It seems that schools no longer teach the 'basic skills' and the educational system does not prepare young people adequately for the world of work. The courses in the last few years at school are seen as irrelevant by many of the less academically minded young people and are too detached from working life and the problems of industry (Jackson, 1985). The possibility is that part of the lower quality of young labour, and its higher unemployment rate, is attributable to inappropriate education. This problem probably can be reduced by raising the labour quality by improved education and vocational training (Hart, 1988).

Recent studies add in a number of ways to the researcher's understanding of the role of education and training in resistance to unemployment. They have pointed out skills deficiencies as one of the mediators of labour market difficulties, initially by creating problems in the transition from school to work, and subsequently by restricting job entrants to a limited range of insecure, often unskilled, employment. Their effects are of course exacerbated in weak and declining local labour markets, but we may expect them to be felt everywhere. Though having basic skills possibly cannot prevent unemployment, the data presented here lend support to the proposition advanced at the beginning of the argument that these skills and work-related skills that build upon young people, provide a degree of protection against it (Shackleton et al, 1995 ; Bynner, 1996).

What role can an education and training system have in resisting youth unemployment? The message that comes from these data is that in situations of ever-growing economic uncertainty, human capital as embodied in general education possibly becomes ever more at a premium. It may offers the foundations on which the skills for modern employment can most effectively be built, giving employers the kind of workforce they are increasingly seeking, and individuals a degree of security. Reducing investment in education, therefore, may put in jeopardy the acquisition of the core skills which lie at the heart of the modern economy and are perhaps the best protection against its risks (Stallmann et al, 1991; Bynner, 1996 ; Woodhall, 1997).

However, developments in the industrial structure of the economy are a key determinant of the changing pattern of demand for skills. These changes are the result of many interacting influences which have been highlighted before by Wilson (1995). The changing industrial pattern of employment in the developed countries also has important implications for other aspects of employment structure, notably the raising share of female employment, increasing incidence of part-time work and the continuing growth in self-employment. Beside issues like employment growth, of course, there are some important issues which need to be considered. Issues such as maintaining the existing stock of skills are also important. As Wilson (1995), has highlighted analysing of employment structures has important implications for the scale and nature of education and training provision. These key issues can be summarised as: "recovery from economic decline;

medium and long-term shifts in labour requirements; maintenance of the existing stock of skills; links between education and training and economic performance; equity versus efficiency" (Metcalf, 1995, p.26).

One of the most important dilemmas for educational policy makers is to distinguish the sort of education which can be fitted to the economy efficiently: vocational education or liberal (general) education. As a matter of fact, as I will discuss later in this chapter, employers demand those employees who understand the business or industry in which they work, who understand the economy in which they work and live, who have the foundation for continued learning and personal development, who have a grasp of the basic academic skills, who understand and capable of working with others, and who are capable of thinking critically. In other words, much of what employers require in today's labour market is rooted in the liberal education and in broad technology concepts as opposed to specific, hands-on-job training.

For these reasons, it is necessary to have an argument about the concept of liberal education and how studies highlight it as an effective element in the connection between education and the new economic era.

3.3 Concepts Of General (Liberal) Education

There are various conceptions of what might constitute a general education, predominant amongst these is liberal education. For centuries, "liberal education" has evolved and has provoked debate. Any comments today that include the term liberal education often require more explanation. The most

common association of "liberal" is with political and social ideologies, yet the tradition of liberal learning really conserves both an intellectual heritage and a way of understanding the world and ourselves (Grugel, 1995). Indeed, embodied in the tradition of liberal education are those very crucial elements of true learning for which there is most demand. Now more than ever before, learning has become a lifelong process as a necessity for remaining valuable in this economy and equipped to deal with an increasing changes (Pring, 1995).

Grugel (1995) points out that it is possible to say that liberal education enables learners to acquire lifelong skills: techniques of analysis, the willingness to suspend judgement for a time, and the ability to modify conclusions as additional information arrives. Associated as they may be with a liberal education, these are also the qualities of mind associated with success in the marketplace. And that is those essential abilities and skills which have been highlighted by companies and employers who are looking them in their future workforce. The learner is liberated from narrow thinking to recognise connections among many ideas. And always, the ethical is injected into consideration of the immediately practical (Bailey, 1986; Grugel, 1995).

As we approach and enter the twenty-first century, two features of modern economies make such skills of even greater value now. The first feature is job mobility, though not in the traditional upward sense. White-collar employees in the private sector find themselves moving less often up a hierarchy, more

often across it. The flow is horizontal among jobs, around divisions, between companies. The second distinctive feature of the new corporate terrain is enlarged job responsibilities. They have broadened as a direct corollary of company decentralisation (Johnston et al, 1986). So it seems that the future's workforce will need as broad a range of intellectual skills and understanding as they can summon.

Liberal learning equips the people with ways of thinking. "A strong liberal education, in short, promotes qualities--a breadth of curiosity, reference, and understanding; flexibility; critical thinking; an ability to learn--that serve one well in any career and over a lifetime. It can help make us what we are capable of becoming and provide personal enrichment and pleasures that are their own rewards" (Will Durant, quoted in Lamson, 1995, p. 29).

Also it seems that liberal learning helps develop decision-making and other skills needed for good designing, it improves imaginations in ways that foster intuition and creativity. Liberal study is also widely valued as a way of developing skills of clear, persuasive communication (Zwerling, 1992; Lamson, 1995).

Liberal education both singly and collaboratively has likely had something to offer prospective company employees. Pring (1995) argues in combination with technical and professional skills, a liberal-learning foundation can provide a kind of high-octane platform, especially for those entering business firms that are internationalising and restructuring. Senior managers in companies in the United States often insist that their long-term mobility is

important as well. But the fact remains that without a definable set of job-related skills, or at least a general familiarity with business culture and company practices, it can be difficult to get started. It has been recommended that the liberal education foundation be complemented by a professional foundation as well (Useem, 1995). He also adds that economic globalisation and restructuring is changing the nature of work. The resulting turbulence and flexibility are probably enhancing the premium of liberal learning in collaboration with professional learning.

Although, the "portable skills" which developed through the process of learning in liberal arts - persistence, communications, critical thinking, negotiating, problem-solving , they seem to enhance individuals in all of their roles and have particular applicability to the workplace (Zwerling, 1992). But at the same time, it is probably important to encourage the kind of education that enables people to progress and become more vocationally flexible so they can successfully negotiate the inevitable shifts in the structure of economy. In this respect, the World Bank's 1987 policy report stated:

> "International experience shows that a strong general education, which schools can provide efficiently, greatly enhances an individuals future trainability. It also shows that job-specific training is very important. Such training is most efficiently provided after initial job decisions have been made and (with) institutions under, or strongly influenced by, the ultimate employer" (quoted in Bowman, 1990).

In order to clarify the concept of liberal education, Nicholas (1983) mentioned the following styles of epistemology in which each of these styles has its own characteristics and approaches to the nature of society, humanity and knowledge. These were considered as critical elements in the analysis of education and its development.

Liberal-Pragmatism: John Dewey's ideas about education is the centre of this theory. Pragmatism emphasises that learning should be directly related to the

interests and concerns of pupils' own future lives as workers and citizens. And these two (practical and theoretical knowledge) can not be separated (Nicholas, 1983; Shoarinejad, 1991). The Pragmatic approach is that preparation for work should be carried out by schools which should make appropriate use of tools and practical techniques as an essential part of their curriculum, while the practical approach should be emphasised in teaching all subjects (Lauglo and Lillis, 1988). While the nature of work should enhance individuals' growth and especially critical abilities. There are other conceptions of a general education linked to the world of work, amongst these are Marxist and Populist theories.

Marxist-Leninist: Socialists, emphasise those sorts of curricula which present mostly practical-based subjects: this is known as polytechnic education. Lauglo and Lillis (1988) recognise that there is some overlap between Pragmatism and Polytechnic Education in that, both reject the division of subjects into "theory and practice" or as "pure and applied" and the notion that the former is always superior and of higher status. They see the curriculum as an integration of both aspects. In the socialist societies education stresses that students should participate in real productive work outside the classroom to learn from workers and farmers and so that the boundaries between educational institutions and productive work and the community should be diminished. While this approach emphasises the value of experience and activity, the collapse of the Soviet Union has led to many economic, social and even educational changes in the ex-Communist countries in both theory and practice.

Populism: the term "populism", has been used to describe widely different social movements and intellectual traditions (Conovan, 1981 quoted in Lauglo and Lillis, 1988). Originally Populism was a movement that celebrated the culture and good sense of rural ordinary people and their rights. It is known

as the movement against a dominant urban elite and is a reaction to industrialism and to urban central development strategies. In this way physical productive work was considered as educational for the development of valued personal qualities, and formal schooling as taking children away from their cultural origin and from the real life situations in which their desired characters are formed (Lauglo and Lillis, 1988). In addition, this movement believed that secondary schools should be prepared to meet the needs of students who would leave schools and return to their communities (see Nyerere, 1967).

Despite these theoretical attempts to link education to the world of work, most countries seem to perceive the existence of a gap between general education and vocational education and training which prevents individuals and institutions responding flexibility to economic pressures for up-skilling and reskilling and changing social demands for education and training. In discussing strategies and policies designed to overcome this gap, according to a report by OECD (1990), countries would as far as possible distinguish between the following aspects:

- the opportunity gap, i.e. the gap which exists in term of career and income perspectives and related social and cultural advantages between those who go (successfully) through vocational education and training and those who go (successfully) through general and academic education;

- the pedagogical and cognitive gap, i.e. the gap between theoretical and applied learning and knowledge. This concept assumes that learning takes place in sub-optimal ways, both in vocational education and in general education, if it is too exclusively based on either a practical or theoretical approach. It also assumes that such learning leads to less than satisfactory results in societies and economies where abstract reasoning as well as the

technical and organisational application of knowledge acquire increasing importance; and

- the institutional gap, i.e. the lack of institutional linkages and bridges between vocational and general education, preventing young people and adults from following pathways appropriate to their projects and abilities, and hindering them in particular from continuing after vocational preparation into higher levels of general, technical and/or academic education (pp. 18-19).

My conclusion from this section of the literature review is that education and training systems seem to have a positive role in economic development and youth employment. It can be achieved by an emphasis on that kind of education and training required by companies and employers; by emphasising those policies which are adaptable to economic changes and also by giving emphasis to increase flexibility in educational aims, approaches, materials and learning process. Education, in terms of its relationship to employment, can be assumed to be an important factor. It possibly helps youth employment by preparing people for workplaces with the necessary and relevant skills and competencies. But we should remember that it will increase the rate of unemployment amongst school-leavers by education which is irrelevant to economic needs and jobs requirement which are highly changeable. In the developing countries the experiences of India and Pakistan in the 1970s which expanded their educational system regardless of their economic structures and which resulted to high unemployment amongst educated people are cautionary.

However, economic progress is a complex phenomena in which there are many uncertainties. Although the cited evidence has drawn a positive role for education, there are some cases where even educational system like Germany and Japan have produced problems. Moreover, according to Wilson (1995), educational and training policy may not necessarily operate in a purely passive fashion, responding to the perceived requirements of the labour market. However, it will be concluded that the relationships between education and employment are many and they can not all be geared in this specific way e.g. to economic productivity (Hinchcliffe, 1987). There are other factors such as technological, social and demographic changes, economic and political problems and so on which affect the youth employment too. But here the stress is on the educational characteristics of individuals and the role of the educational system in providing an attractive, appropriate, and applicable way for the preparation of young people for the world of work. Hence, many studies have highlighted that strengthening general education at primary and secondary levels is the first priority for public policies to improve the productivity and flexibility of the workforce. In addition to generating broad benefits to society, it seems that general education increases worker mobility and productivity. The importance of general education as a foundation for further education and training has long been recognised and recently emphasised (Lockheed and Verspoor, 1991 ; Middleton et al, 1993).

3.4 Education for work

The theme of education for work, or the idea that education should have economic relevance and vocational purpose, as well as a concern for the

personal development of the individual, has been presented throughout the history of state education in all industrialised societies. Indeed, that an understanding of and preparation for the world of work is an important aim for education systems which needs analysis. A consequence of this thinking, if not an assumption, is that education might "serve" society by providing manpower and by improving its operation efficiently. The purpose of the schools, so the thinking goes, it to sort, shape, and certify students for the needs of commercial and governmental enterprises (Sherman 1983). It has been claimed that young people ought to be taught how industry creates national wealth (DES, 1979), and that they need to reach maturity with a basic understanding of the economy and the activities which are necessary for the creation national wealth (DES, 1977).

The definition of "education for work" deals with general education for the world of work (Watson, 1983) and as a movement attempts to vocationalise secondary education and to bridge education and the world of work by an emphasis on life-long learning, suitable curriculum aims, issues, and organisation of schooling (Jamieson, 1994). "Education for work as a curricular subject includes, then, all the formal and informal educational characteristics and techniques which prepare the student to be integrated physically and spiritually in tomorrow's flexible work world, to recognise the range of professional opportunities, and to personally choose between them" (Dror and Bar-Lev, 1992)

Debate concerning the relationship that ought to exist between the schooling system and work, as I mentioned before, is not new but it became stronger during recent decades when some rapid changes in the world of work and employment have led toward changes in the content of vocational education. Many societies have faced increasing unemployment among school leavers which seems it is because of their traditional vocational education. Since the 1970's, the following circumstances created the need to strengthen the links between learning in school and work practice, with the aim of facilitating the transition from school to employment:

1. The growing state of unemployment among adults and youth has increased the need for providing adequate educational arrangements to help those in search of new employment possibilities;
2. Numerous developing countries view work as a nation-building activity and therefore training for high technology work has become part of both the political ideology and educational practice;
3. Economic needs have increased the demand for educated women and minority groups to participate in the high technology labour force of the nation's production system;
4. The quest for self-fulfilment through work has been intensified and consequently schools are required to deal with the self-awareness of their pupils (Dror, 1991, pp. 796-800).

Although a curriculum preparing for work refers to courses included in general non-vocational school programmes, it focuses on knowledge and skills which are considered to help graduates succeed in their occupational careers. And it may also helps students to gain satisfaction and self-fulfilment in work taken on in their adult lives. There are four related questions which might lead the researcher to distinguish an appropriate model among available and different models for the schooling and work relationship:

1. At what age should it start?

2. Where should it be located: in compulsory school, after high school, or in work?
3. What sort of curriculum process e.g. teaching and learning is required?
4. How should this educational process be assessed?

Briefly, this debate started seriously with a series of international conferences conducted by UNESCO beginning in the early 1970s on the subject of work and particular careers education. According to the results of the conferences, educational planning units were set up, usually within the Ministry of Education, or National Commissions were appointed to address the fit between education and work or the avoidance of educated unemployment (Psacharopoulos, 1991). Other international institutions like OECD and national committees and bodies, also become concerned with changing and developing of their education systems. For example, in the United Kingdom Prime Minister Callaghan's speech in Ruskin College was a beginning which led to a debate between educators, employers, and researchers about vocationalism and the reform of education. In Britain the Youth Opportunities Programme, Technical & Vocational Education Initiative, Youth Training and National Council for Vocational Qualifications and also the Education Reform Act 1988 are the outcomes of these debates (Watts, 1993).

In the face of continuing high levels of unemployment, young people will continue to seek out ways of establishing a livelihood for themselves according to their own priorities. It is an important task of educational policy

that these concerns be recognised and addressed in the schooling process. Some important concerns in the argument as it affects the UK are as follows:

1. economic and social developments have brought about fundamental changes in the youth labour market, adding to the pressures for a comprehensive review of the orientation of secondary education;

2. an increasing proportion of secondary students can be involved in different forms of employment (part-time and domestic work). Whilst it is of considerable importance to the young people concerned, it is almost completely ignored by their schools;

3. adequate policy formulation and reform has been hampered by confusion in understanding societal changes about the intended outcomes of schooling, and by conflict between the interests and values of different groups involved in the political process. Many studies on youth, education and employment have contributed to greater understanding of the issues involved, yet each has been limited by selective terms of reference from addressing the complexity and interconnection of different policy dimensions;

4. although education policy has limited effects by itself, it is possible for schools to develop curricula which achieve general educational objectives whilst recognising the priority which young people place on achieving a livelihood, and the steps which they take themselves to achieve this objective.

Such curricula would be characterised by the following: students' experience and concerns will be taken seriously; students share in decision making about goals and content; it is based, where possible, outside the school, in 'real' situations; it develops students' intellectual, technical and social skills and extends their knowledge to encompass the broader economic, political and technological milieu.

As a result, in reviewing the literature on 'education for work' studies, some trends can be identified. Jamieson (1994) has summarised them as follows:

1. The emphasis has shifted away from preparation for work in school toward the concept of lifelong learning that is work related.
2. There is realisation that both technical and social and interpersonal skills are required in the workplace and that these need to readily transferable.
3. The old dichotomies between liberal education and vocational education, and between education and training, are breaking down.
4. Preparation for the life of work has implications for curriculum content, pedagogy, and the organisation of schooling.
5. Rapid technical and organisational changes in the world of work have profound implications for education (pp. 1736-1740).

In relation to this topic "education for work" the following factors are relevant areas of study: 1) a changing labour market; 2) employers' expectations about characteristics of the future workforces ; 3) skills for the future; 4) vocationalisation of secondary education (work-related curriculum); 5) preparing students for the future world of work; and 6) the transition from school to work.

3.4.1 A Changing Labour Market

By the next century, there will have been dramatic changes in the requirements for different types of labour, including the emergence of occupations that are not as yet known (Wilson et al, 1987). According to the

OECD studies (1984), education and training systems aim to produce skills and qualifications appropriate to the new labour market. The future of work, in their view, will be accompanied by a growth in the service sector and new high technology work processes.

Some researchers have highlighted the fact that future employment growth seems likely to occur in the installation, maintenance and repair of services and products, information processing, administration, and other office work, and personal services (Karmel, 1985). These occupations are not clearly associated with particular formal education qualifications. They involve considerable interpersonal skills, and are likely to provide many opportunities for young people. If the assumption of higher growth in service employment proves justified, employees in the sector will need new and high order skills 'for instance in interpersonal relations and the management of people' (Ibid.). In fact the question of how we will educate our young people for a future which is qualitatively different from that of their parents is the most important question facing educators in the 1990s. It seems that new markets and technologies will require a more highly skilled, better educated and more mobile workforce in which professional and technical staff will have to be supported by workers trained to perform a range of tasks which involve processes rather than repetitive assembly. Even at a time of high unemployment, skill shortages exist and firms wishing to exploit new economic opportunities have (or prefer) to change or upgrade the skills of their existing workforce (Skilbeck et al 1994). More specifically in Europe, the current labour market trends point towards:

- a strong reduction in demand for low-skilled workers;
- universal use of modern information technologies;
- a new emphasis on transferable skills;
- a decrease in the number of manufacturing jobs coupled with an increase in jobs related to design, maintenance and marketing: according to a recent study, less than 50 per cent of the labour force in manufacturing firms is presently employed in direct production, while R&D, design, work scheduling, marketing and distribution, and financing and administration account for more than 50 per cent of such employment;
- the emergence of an elite of industrial workers responsible for automated manufacturing equipment;
- new managerial skills to reduce lead times, organise team-work and plan human and capital resources in a cost-effective way;
- female activity rates keep increasing as more and more women seek employment (Kairamo, 1989, p. 45).

3.4.1.3 Factors Influencing Change

Past changes in industrial structure have arisen as a consequence of a number of inter-related factors which can be seen when we compare the structure of industry in the Fordism period with Post-Fordism. Wilson (1995) has highlighted some factors which include:

- technical change: as new technologies are introduced this often has the effect of reducing employment, since the same output can be produced by fewer people;

- specialisation: as economies develop there is a tendency for people and companies to specialise in particular tasks, which can result in substantial productivity gains due to increasing returns to scale, and benefits from learning by doing;

- changing patterns of demand for goods and services: as economies get richer there is tendency to follow Engel's law for individual consumption patterns, that is to spend a smaller proportion of income on necessities such as food and

shelter and more on luxury items such as designer products or leisure and tourism;

- shifts in international competitiveness: these may be linked to the items above but also depend on factors such as domestic inflation rates, international exchange rates, and the international framework for international trade (for example, membership of the European Union and GATT agreements).

3.4.1.4 Post-industrial Society

Some of the literature on education-economic links uses some terms such as the 'Post-industrial Society', 'Post-Modernism', and Post or Neo-Fordism to describe contemporary developed society. A simple definition of the term 'post-industrial society' refers to a situation where the number of jobs in the primary and manufacturing industries decreases. For example Bell (1973) describes the post-industrial society as: the expansion of transport and public utilities; the mass consumption of goods; a decrease in the proportion of money used for food with extra money spent on household durable and luxuries; the growth of personal services, restaurants, hotels, auto-services, travel, entertainment and sport.

Gershuny (1978) also discusses the changes caused by automation and says that "we face a future in which an educated elite minority is employed in intrinsically rewarding technical tasks connected with the process of material production and the majority is employed only in the undemanding manipulation of automated machinery for the satisfaction of their own needs." Castles and Wustenberg (1979) refer to a small number of technicians

and maintenance workers who need a very high level of education and training and the majority who require very few skills.

These authors therefore describe fundamental changes in society which might have an effect on the education which is offered to young people. The most important issue is the fact that young people face the possibility of unemployment. Cohen (1985) reminds schools that they have "to take into account the fact that in a situation of structural unemployment and credential inflation, the links between educability and employability on which so much of the teachers' authority rests can no longer be made with any degree of conviction." In this situation many authors argue the case for a number of 'transferable skills' which can be used in a number of different occupation.

Thus as Brown and Lauder (1995), point out, the creation of a post-modern economy will need to continue to structure opportunity on the basis of individual effort and ability. Therefore it seems that education needs to be organised on the premise that all rather than a few are capable of significant practical and academic achievements; of creative though and skill; and taking responsibility for making informed judgements. The role of education in this context could become one of nurturing this new requirements which requires value added management techniques, and a flexible, skilled and responsible workforce which is able to work with computer-integrated production systems (Mathews, 1989). This 'high skills route' will lead to high quality output which is the key figure to leading age economies such as Japan, Germany, and Pacific Rim countries (Hodkinson and Issit, 1995).

3.4.2 Employers' Expectations Of The Required Skills

Studying economic needs according to the employers' views and taking into account what they think about the skills and abilities of their future employees, is a crucial matter in curriculum development (Feuzat, 1978). As an important factor in improving the aim of the curriculum and its structure, we need to consider the employers' opinions in this case (Taghipoor-Zahir, 1990). A number of surveys conducted in different countries over the last few years have helped to illuminate employer expectations of school leavers. It is clearly a huge research task to identify the needs of employers in terms of the skills which they require of school leavers and trainees (Wellington, 1986). So far in research by Kurdistan University, local employers have been asked about the abilities and skills of their future employees. They focused on some abilities and skills such as practical and related knowledge to work, creativity, hard working, adaptability, punctuality, and responsibility (Keiani and Azizi, 1991).

A Canadian research (Leroux and Laflear, 1995), recently has grouped the employability skills into three categories:

1. Academic Skills, which include communications skills, critical thinking, problem solving and recognition of the need to learn for life;

2. Personal Management Skills, which include the ability to set goals and to take responsible action, self-esteem, initiative, and acceptable attitudes;

3. Team Work Skills, which include the ability to work with others, respect for others, and ability of lead and follow as appropriate.

In a research project in the UK which was concerned with the place of General Studies in further education, employers asked: (a) to broaden a students' outlook, (b) to improve powers of communication and (c) to enhance general knowledge as the basic of these studies (Pullen and Startup, 1985). Sultana (1990) points out that skills and qualifications are needed more and more, but personal qualities are important for some of the employers. According to Wellington (1986), these qualities are defined as interest, motivation, initiative, confidence, self-belief, and maturity. A study in the USA shows employers to want employees who have learned some skills like; learning how to learn, problem solving, creative thinking, self-esteem, goal setting/motivation, personal and career development, interpersonal and negotiation skills, teamwork, organisational effectiveness, and leadership (Law and Pepple, 1990). As can be seen in Table 3.2, Cumming (1988) has classified a list of employer expectations which has been based on a number of studies in Australia 1978-1986. In 1983 the Colorado Department of Education conducted in-depth interviews with employers, young entry-level employees, and business personnel in Colorado to obtain specific information about the skills needed in entry level jobs available to young persons with high school education. A similar study by the Colorado Department of Education (1990) has identified the same list of skills which employers and personnel highlighted as a required skills for youth employment in their

companies. Similar results have been reached to questions about expectations of employers from youth and schools in future by McCoy and Reed (1991).

Attitudes	Attributes	Knowledge	Skills
• *hard working*	• responsible	• career options	• the three R's
• *motivated*	• reliable	• work (occupational)	•oral communication
• *interested*	• well-groomed	• work (general)	• job seeking
• *respect for authority*	• neat and tidy		• living
• *loyal*	• polite		• problem-solving
• *co-operative*	• punctual		• decision- making
• *accept direction*	• adaptable		•discovering knowledge
• *contribute to economic system*	• flexible		• negotiating
• *obedient*	• good character		
	• independent		

Table 3.2: *Employer Expectations Based on a Number of Studies in Australia 1978-1986*
Source: *Cumming (1988).*

Here I review respectively similar lists of skills which had been identified as the necessary competencies for employment by different individuals, and organisations as well as in different climate and societies. Lots of doubts will be raised about the validity of these studies and how they can be explained. The only fact that might explain the high similarity of requirements is the common nature of economy in the developed societies. But an important question remains: to what extent can data like these be applied to a country like Iran which has significant economic, political and cultural differences from industrial societies?

3.4.2.3 Employer Perspectives On Youth

Employers' attitudes toward youth, the youth labour market, and prospects for a national system of youth apprenticeships in 1994 in the United States were studied through a survey of firms that had participated in local youth apprenticeship or co-operative education programmes in seven US cities, and

focus group discussions with small and large employer in eight US communities. The studies established that the period between completing school and obtaining a good job is getting longer, the link between formal schooling and work is becoming more tenuous, and employers (especially small firms) are generally wary of any policy initiative designed to encourage the hiring and training of new workers. Employers were reluctant to initiate youth apprenticeship programmes given the present labour surplus/job shortage. They generally felt that young people lack discipline, good work attitudes, and communication skills and that schools do not prepare youth for employment. Screening was employers' dominant concern regarding participation in a youth apprenticeship programme. Focusing national attention on the absence of good jobs for young people and emphasising flexibility in any policies develop were concluded to be the keys to improving the school-to-work transition (Robert, 1994).

The fact is that the U S employers and its schools do not mean the same thing when they talk about building better links between the world of work and learning. Except through anecdotal evidence, most schools and colleges most likely know little about employers' perceptions of them, about the skill requirements employers set, or about their training needs. On the other hand, employers, notably those with little direct experience with educational institutions, are unaware of the ways in which education can relate to the workplace.

It seems that in many large firms in the United States, modern employers invest considerable resources in developing their physical and human capital. In a survey by the National Centre on the Educational Quality of the Workforce on more than 4,000 private establishments in the USA (1995), the following four basic types of training have been emphasised by employers. The type most frequently cited by them was instruction in the safe use of equipment and tools. Ranking second were training programmes that bolster attitudinal and behavioural skills which improve teamwork efforts or problem solving skills and training in sales or customer service. Instruction in the use of computers and other new equipment ranked a close third. A distant fourth was training designed to compensate for the lack of basic literacy and numeracy (IRHE, 1995).

An important question in assessing the economic relevance of vocationalised education is what employers in fact are looking for when hiring school-leavers. Oxenham (1988) in his research in certain developing countries, argues that there is no clear general explanation of what employers want from school, there may be no coherent employers' view, and that there is in any case no firm connection between scholastic qualification and job function. His inference is that vocational training is best left to the employers themselves, and that schools should concentrate on improving what is their distinct role: general education. Wilms (1988), writing about the United States, similarly points out that employers "tended to favour applicants with academic rather than vocational educational backgrounds; they place premium not on technical skills but on good work habits and attitudes".

In a comparative study, by Noah and Eckstein (1988) of Britain, France and Germany, they also reached a similar conclusion about the schooling system. The demand from employers is not exactly for pre-vocational courses relating to specific occupations or families of occupations. They noted that employers would like schools to be managed more "efficiently" (i.e., more in keeping with business notions of good management), and that schools should teach more general knowledge about the "world of work" and its requirements. What employers want from general secondary schools is that schools should define their work so that it better corresponds with good and practically-oriented basic communication and computation skills. However, employers seemingly do not wish schools to place greater emphasis on the specific skills associated with particular occupations. Perhaps, one reason is that employers often doubt that schools can do this properly.

These researchers have argued that ending the disconnection between schools and employers requires more direct transactions between two. Better practice would result if employers would work with schools and colleges as a main supplier of their workers (Miles, 1991). However, in the future, most likely society will need citizens who are both literate and employable. That is schools' responsibility to teach the skills, attitudes, and understandings to ensure this.

3.4.3 Skills For The Future

Skill is a difficult concept to define. It is a term used in many different ways. It can be used to mean dexterity and the technical knowledge associated with

craft trades such as printing, engineering or building. It can be used to mean educational achievement in the sense of general skills such as numeracy and communication. It is also used to mean the intellectual qualities identified in skills such as problem solving, critical thinking and analytical ability (Paczuska, 1995). As Wellington (1987b) has argued, 'skills' are not entities in themselves, separated off from the people in whom they reside. Skills do not exist in their own right. Employers do not recruit skills. They recruit people. Skills reside in people and are acquired by people. Skills are not entities which are in short supply. In fact, what industries need are people with the abilities to develop new skills, to learn new knowledge, to acquire new concepts and theories and to adapt to technological change with enthusiasm and lack of fear.

However, this research survey highlights the fact that the need to improve standards in the skills of communication and the application of number amongst young people is the most frequently expressed concern employers and companies managers. Competence in communication, the application of number and information technology have been considered as key skills for all young people. Many commentators, and employers in particular, have stressed the importance of developing wider skills including inter-personal, (particularly team-working), presentational skills, a problem-solving approach, and the ability to 'manage one's learning'. It seems that in a society which needs increasingly to be committed to life-long learning this last is a key to all the rest. Employers want entrants with a good command of

language, both oral and written, and also a good grasp of basic arithmetic without the help of a calculator.

3.4.3.3 Core Skills

Obviously, employers are looking to education to respond to their wish to see entrants to employment possessing or developing a range of skills that are valued highly in all forms of work. These according to Dearing (1996) include: personal and interpersonal skills; in particular, effectiveness in working as a member of a team; the ability to manage one's own learning, as a skill needed for life-long learning; and a positive problem-solving approach.

The Skills 2000 report in the UK by the TUC in 1989, maintains that everyone in work needs training at every stage of his/her working life. While jobs may require varying degrees of skill, all jobs were seen to involve certain 'core skills' such as communication skills, numeracy, literacy and a regard for health and safety. Also it seems that technical, economic and structural changes in work and the economy requires skill up-dating and evolution.

These additional 'core skills' central to every job included the development of tool skills, (the ability to use work tools effectively and efficiently), skills concerned with working with other people, problem solving skills, as well as a general orientation to work that was based upon pride in skill and work. Appropriate induction procedures were seen as essential to the achievement of these 'foundation skills'. By effective induction, the workforce would have a foundation for development, as well as the capacity for flexibility and

transferability in training process and workplace (McBride and Moreland, 1991).

Similar statements were published by the Further Education Curriculum Review and Development Unit (FEU, 1980, 1981, 1982) and the Institute of Personnel Management (1980). Very briefly it seems that there is a high convergence in determining the required skills and abilities for the new economic situation. The central emphasis has been focused, in the existing literature, on flexibility and adaptability of the future workforce. Also 'transferability' of skills in the workforce was seen as important for economic recovery. Related researches have recognised the need for a trained workforce to be able to move from one job to another, and perhaps from one sector of industry to another as technological change and other factors kept the labour market in a state of constant continuity. While most of the educational systems even in the developed societies have failed to achieve to their objectives in this respect.

3.4.4 The Vocationalisation Of Education

"Vocationalism" is a function, whereby the educational system services the workings of the economy, deriving its purpose and rationale from assessment of economic needs and requirements, such as trained manpower for the labour market (Ashton et al, 1990). Vocationalism according to Dewey (1916) is :

> "a process or activity, the imparting and acquisition of broadly defined skills and knowledge believed to have a discernible relationship with the capabilities needed for productive work and required or expected of workers, now and in the future" (quoted in Skilbeck et al 1994, pp. 4-5).

The "vocationalisation" of secondary education is taken to mean curriculum change in a practical or vocational direction. This is an old and recurring policy theme in many countries, in particular in the Third World (Lillis and Hogan, 1983; Hultin, 1987; Gustafsson, 1987; Chisman, 1987). Psacharopoulos (1988) in his review about the declared aims of the World Bank financed "Curriculum diversification" (vocationalisation) in a number of countries, concluded that "relevance for the world of work" and "equity considerations" are the common aims.

It seems that secondary school output has in recent years grown much faster than employment opportunities, particularly in most of the developing countries as a result of their programmes for increasing the ratio of enrolment in high schools (UNESCO, 1984). Policy makers therefore, need to address this problem where its logical result is youth unemployment. These imperatives probably shape educational policy, regardless of whether the problems can be remedied by educational means. Vocationalisation has political appeal as an educational response to economic problems.

So there is tendency to say that vocationalisation policies are a quest for greater labour market relevance of education: for better articulation between the content of schooling and subsequent application of acquired skills, attitudes, and knowledge in the world of work, both in obtaining a livelihood and in becoming more productive in the work obtained (Lauglo and Lillis, 1988). Vocationalisation of mainstream, general secondary schooling, rather than more specialised and institutionally separate vocational training, is at

the centre of policy attention because policy is not responding to shortages of trained persons but to unemployment among those leaving the mainstream of the education system. Hence the thrust of vocationalisation policies is to graft vocational elements onto a curriculum that remains predominantly academic, without shunting students away from the path to higher education (Ibid.). Vocationalisation policies may aim to discourage unrealistic ambitions for further academic study, when selection to such study is becoming increasingly competitive, and to teach attitudes conducive to workplace discipline. A recurring theme in policy debates in developing countries, for example Iran, is that students harbour "unrealistic" ambitions for further academic study and eventual entry to white-collar jobs (ME, 1996).

3.4.4.3 The Work-Related Curriculum

The belief that education should attempt to meet the needs of the workplace, as well as the requirements of employment, is by no means a new issue, only it has stated in different ways and terms such as 'the work-related curriculum' (Wellington, 1993). The work-related curriculum for secondary schools made considerable progress during the 1980s in the UK to the point where its value was affirmed in the preamble of the 1988 Education Act and the guidance given for the cross-curriculum theme of economic and industrial understanding (Skilbeck et al, 1994). However, the work-related curriculum is a specifically British term. In the new vocationalism movement in UK, which involves more or better vocational courses for 14-16 year olds it has now won a secure place in English educational provision (Saunders, 1993).

The work-related curriculum is a concept which has potential to gain unity and coherence to the work of the school-industry links (Miller, 1989). This term refers to those aspects of school curriculum which deliberately relate to the world of work. In this process, the work-related curriculum will be shaped by four following factors: the economy; the transition from school to work; the relevance of curriculum and student maturation; and the needs of an educated citizenry (Jamieson, 1991). Watts (1993), in explaining the concept of the work-related curriculum points out that this term covers two strands in the UK National Curriculum: one is economic and industrial understanding which is concerned with the pupils' role as citizens; and the other is careers education and guidance which is designed to help individuals in their role as potential future workers.

In responding to questions such as: what is the work-related curriculum? what does it mean? and what does it look like?, it seems that Miller's (1989) definition is a clear. He believes that the work-related curriculum includes: some general aims concerning the preparation of pupils for adult and working life; the framework for knowledge, understanding and skills such as economic and industrial understanding and careers education and guidance; those aspects of the personal and social education programme which are related to the world of work, e.g. enterprise activities; and the work-related activities as well as work experience, industry weeks, mock interviews, equal opportunities and world-of-work days.

In my understanding the work-related curriculum is firstly concerned with the management of pupils' future employment; and secondly is based upon a relationship between the schooling system and industry and commerce. Such a relationship may provide:

1. an appropriate curriculum for secondary schools which emphasises required skills for employment after school;

2. a collaborative commitment between education and industry;

3. a range of relevant and simulating experiences for students;

4. balanced practical and academic courses and activities for students;

5. a range of various learning styles which emphasise discovery methods;

6. the transition of young people from school to adult and working life by emphasis on careers education and guidance, renewing the school curriculum, and providing a range of active and creative skills which are necessary for their future work (i.e. education for employment);

7. the understanding of young people of economy and industry (i.e. education about employment);

8. the educational standards across the whole curriculum by providing a range of resources, environments and contexts in order to improve the motivation and attainment of all students (i.e. education through employment) and finally,

9. vocational preparation through work experience, work education, and other work-related activities.

3.4.4.4 Work-Related Activities

When the term 'the work-related curriculum' was coined in the end of the 1980s this was generally interpreted as describing a set of learning experiences that made use of the world of work (or business) as a resource, and through which certain curricular aims and objectives could be most appropriately met. These work-related activities included both those that involved students going out into the community and those that involved bringing the community into school. Within the former category are workplace visits, work experience on employers' premises and work shadowing, while the latter group includes talks (e.g. on specific jobs or on application skills), work-related curriculum projects, mock interview schemes and business simulations. All of these activities are costly to organise, particularly in terms of staff time. A school, therefore, needs to think carefully about the purposes of any work-related experience before investing resources into setting it up. The purposes have to be considered in curriculum terms. Work-related activities are examples of extended curriculum activities. There is a tendency that schools must not allow them to be viewed as (wasted) time out of the curriculum, but in order to achieve this, the activities need to be justified in relation to their contribution to students' learning (Miller, 1989 ; Saunders, 1993 ; Wellington, 1993).

However, a quick look to Table 3.3 which gives an example of a school's programme of in the UK, reveals in the British schooling system having work-related activities for all secondary schools' students is required. That will keep students in a regular involving with the real working life and will increase their chances to be prepared according to workplace' requirements.

Students	*Work-related activity*	*Learning objectives*	*Context*	*Curriculum location*
Year 7	work shadowing	to know about different types	parents' workplace	tutorial programme
Year 9	Insight into industry conference	to understand the inter-relationships between different work roles	in-school with employers from a large engineering company	suspended timetable
Key Stage 4	work experience	to understand the changing nature of work and its impact on people's lives	range of small and medium sized employers	GCSE Integrated Humanities course
Post- 16	work- related projects	to understand the application of subject concepts and skills in the	range of local companies	various GCE A-Level and GNVQ courses

Table 3.3: *Example of a programme of work-related activities*
Source: Barnes and Andrews, (1995).

3.4.4.5 *Curriculum Aims*

As I will discuss the aims of work experience later in this section, Miller, Watts and Jamieson (1991) have identified ten possible aims for work experience. Barnes and Andrews (1995) believe that the following eight aims can be considered to relate to the curriculum:

1. Enhancing: to enable students to deepen their understanding of concepts learned in school, and to apply skills learned in school.
2. Motivational: to make the school curriculum more meaningful and significant to students so improving their levels of attainment.
3. Maturational: to facilitate students' personal and social development.
4. Investigative To enable students to develop their knowledge and understanding of the world of work.
5. Expansive: to broaden the range of occupations that students are prepared to consider in terms of their personal career planning.
6. Sampling: to enable students to test their vocational preference before committing themselves to it.

7. Preparatory: to help students acquire skills and knowledge related to a particular occupational area, which they will be able to apply if they wish to enter employment in that area.
8. Anticipatory: to enable students to experience some of the strains of work so that they will be able to manage the transition to work more comfortably (p. 35-36).

Barnes and Andrews (1995) argue that aims 5, 6 and 8 relate specifically to careers education and guidance in that the first two of these support decision-learning and the other supports transition-learning. Some teachers, particularly those working with students with special needs, would argue that aim 3 which is related to Personal and Social Education, is closely linked to careers work in that work experience can help to develop employability skills. Aim 1 (enhancing) is related to the subject curriculum, aim 2 (motivational) to the whole curriculum, aim 4 (investigative) to economic and industrial understanding and aim 7 (preparatory) to vocational programmes.

3.4.5 Preparing Students For The Future World Of Work

The story is that too many young people leave high school without the skills, attitudes, and understandings which are necessary to successfully enter the world of work. Among all age groups, the teenage unemployment rate is the highest in the most countries (McCoy and Reed, 1991). Often jobs are readily available, but these young people lack what is needed to get and keep the job. This might be caused by the high speed changes in industrial structure which is a consequence of some inter-related factors such as technological changes, societal changes, specialisation, changing patterns of demand for goods and services, and shifts in international competitiveness (Miles, 1991; Wilson, 1995). It seems reasonable to expect schools to teach students what they need to succeed in the world of work. But, how can schools adapt learning process

with a changing economy? What practical policy and way can be addressed in the educational programmes? What are the roles of career preparation, career guidance, work experience and other practical approaches in the preparation young people for the future life? In this section I try to explain what do career preparation, career guidance and work experience mean. How these concepts have been considered the educational systems in industrial countries and what results can be expected of these processes in the youth situations for employment?

3.4.5.3 Career Preparation

In a report, *The Forgotten Half: Non-college-Bound youth in America,* the William T. Grant Foundation Commission on Youth (1988) suggested that:

> The young people need some assistance, and educators allied with employers and community leaders can provide it by giving students opportunities to reach beyond school walls. By moving education into the community, educators not only tap rich learning possibilities but also give youth the exposure and confidence they need to make it on their own (quoted in Paris 1989, p. 29-33).

If we suppose that "the heart of schools is the curriculum, and until it has a place there, careers education is unlikely to be done on a comprehensive or systematic basis" (Watts, 1973). But if careers education is to form part of the curriculum of a school, it could be there as a full partner along with other academic subjects and not there as an opportunity for the non-academic stream only (Rogers, 1979). In order for vocational preparation, to become important in its own right and to have a full place in the panoply of school programmes it is necessary to ask schools to reconsider certain essentials about guidance and careers education. Indeed, the work preparation programme needs some crucial elements to be developed in schools as well

careers education and guidance services. In particular the information which would enable students to make realistic choices.

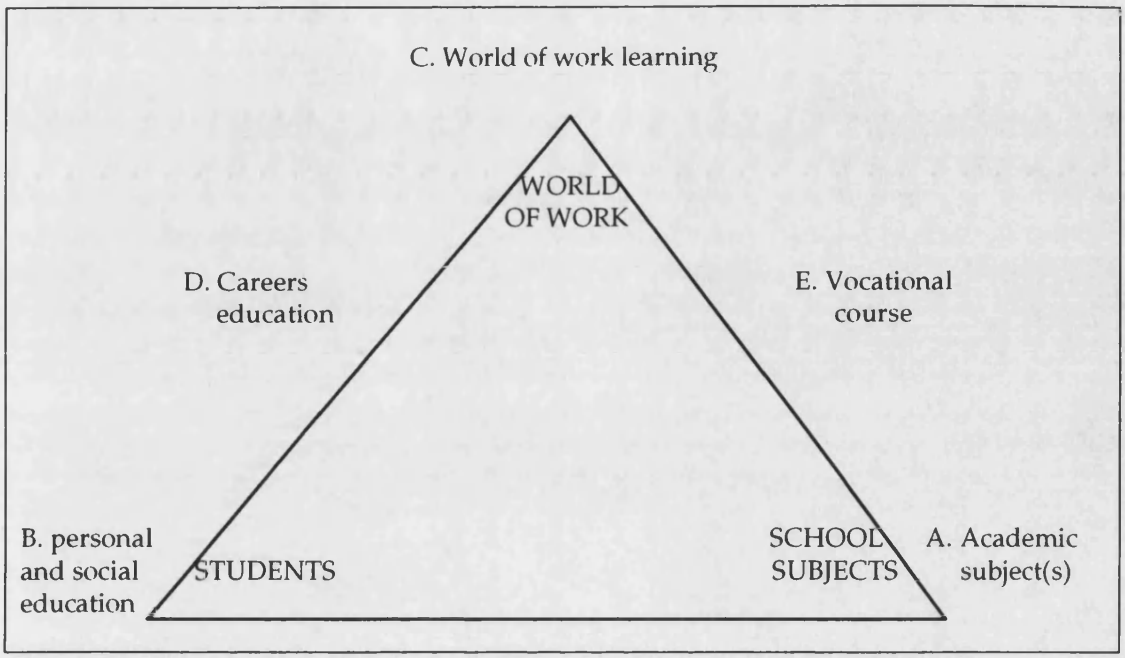


Figure 3.3: *Role of careers education in the school programme towards the world of work.*
Source: *based on Miller et al (1991), p. 23.*

This would enable careers education to be one effective factor in leading students towards employment opportunities (Figure 3.3), but in some countries it has not been considered important in the school programme. For example in survey by HMI (1995) in the UK revealed that even though schools provided generally sound careers guidance for students at the end of Key Stage 4 and sixth form, careers education was handled less successfully on the whole and students needed to be helped to develop a better and more realistic understanding of changing nature of the workplace (p.3).

3.4.5.4 Goals Of Careers Preparation

One of the goals of careers education and guidance is to give students an opportunity to focus on a particular area of interest and to gain knowledge

and skills that will assist them in entering the work force. Preparation of students for real work situations, might enable them to gain the essential skills necessary for employment, e. g. skills which have been addressed so far in this chapter.

A second goal is to help students decide before they enter the workplace or higher education, whether the area of specialisation is 'right' for them. If by taking the programme and doing the actual work of a person in that field they discover it is not what they want to do they have lost little, and hopefully have gained positive work habits and attitudes (Paris, 1989). Indeed, preparation does not happen when an individual is ready to leave high school or a post-secondary programme. Preparation beings at an early stage in development: it is a lifelong process that can include career changes, continuing education, and other factors. In the process of preparation of young people for the world of work, it seems that familiarising them with the realities of work situation is very important factor. It can be done by different ways, of which 'work experience' is the main one.

3.4.5.5 Work Experience

In modern times it is not habitual for young people to accompany their parents to work and hence obtain some feel for what will be required from them in adult life. Work experience aims to fill this gap, as well as provide a worthwhile educational experience that can aid and motivate the school-based learning. Work experience is probably the most significant work-related activity in UK secondary schools (Harris et al, 1997) which it can be

argued is as an attempt to reintegrate the world of work into schooling by transacting a period of education in a workplace under the joint supervision of the representatives of education and work (Miller, Watts and Jamieson 1991). It has in recent years become an accepted part of the school curriculum in Britain (Watts et al, 1989). Although it has a fairly long history for students within the post-war education system, but very precisely the first major educational report in the UK which mentioned it was the Newsom Committee in 1963 (Institute of Careers Officers, 1984). It suggested that while such schemes were not 'likely to become practicable or even desirable for the large majority of boys and girls', experiments might be encouraged (Watts et al, 1989). In defining work experience Watts (1983) writes:

> work experience can be defined as a situation in which people experience work tasks in real work situation, but without taking on the full identity of a worker (quoted in Miller, Watts and Jamieson, 1991, p. 16).

This activity is generally distinguished from other activities undertaken by students on employers' premises such as work visits, work observation and work shadowing, by its emphasis on doing a job of work in conditions as close as possible to normal employment. Henley and Smith (1987) point out that experience of work is adjudged to be a more appropriate title since it covers a range of experiences in a variety of modes and not simply a common fixed period of time. By and large experience of work has been commended as a way to enable employers to better understand education and to consider their own expectation of young people when recruiting and training.

3.4.5.6 Purposes And Effects Of Work Experience

It seems that schools now attach more importance than before to helping students to understand how industry operates, and its place in our society. According to Jamieson et al. (1986), work experience in the UK has become widely recognised as a valid educational tool in helping school pupils towards understanding industry and preparing them for adult life. One of the main British strategies for making schooling more relevant to the needs of industry - teaching about the word of work - involves teaching about what industry does (Bates et al, 1984). The world of work concept gains its particular significance from a wider vision of society in which it is contextualised. In educational terms researches provide a rhetoric and a framework within which schools can formulate programmes for teaching about the world of work. But it is argued that teachers themselves have little direct knowledge or experience of the world of work. This problem in the developing countries is much more critical, because there is not any sort of partnership and connection between teacher education and the workplaces in these countries.

Work experience schemes are probably one of the most obvious ways in which the world of work can be introduced into the school curriculum (Bates et al, 1984). But the important question is: to which pupils will work experience make schooling seem more relevant? Work experience may presents the opportunity for students to stand on their feet, show self-reliance, behave as an adult and feel as though they were part of the real

world (Henderson and Knutton, 1991). Hence it is important that this process to be generalised for pupils of varying ability and aptitude and should neither be designed as vocational training nor aimed at a limited range of pupils only. There are many references which show work experience increases student job knowledge and interests, career maturity, and it has a positive effect on their career choice (vocational decision-making, choosing and getting a job), it prepares students for social and life skills, it improves core skills, and it attempts to differentiate between personal/ interpersonal skills and task-related skills (Pumfrey and Schofield; 1982, Jamieson and Lightfoot; 1982, Saunders 1987; Sime, 1987; DfE, 1995; Weston et al. 1996). Miller, Watts and Jamieson (1991), have developed the following list of possible aims for work experience which is based on Watts (1983):

1. Enhancing- to enable students to deepen their understanding of concepts learned in classroom settings, and to apply skills learned in such settings.
2. Motivational- to make the school curriculum more meaningful and significant to students, so improving their levels of academic attainment.
3. Maturational- to facilitate students' personal and social development.
4. Investigative- to enable students to develop their knowledge and understanding of the world of work.
5. Expansive- to broaden the range of occupations that students are prepared to consider in terms of their personal career planning.
6. Sampling- to enable students to test their vocational preference before committing themselves to it.
7. preparatory- to help students to acquire skills and knowledge related to a particular occupational area, which they will be able to apply if they wish to enter employment in that area.
8. Anticipatory- to enable students to experience some of the strains of work so that they will be able to manage the transition to work more comfortably.
9. Placing- to enable students to establish a relationship with a particular employer which may lead to the offer of a full-time job.
10. Custodial- to transfer some of the responsibility for particular students for a period(p. 18).

A similar study on TVEI in Northamptonshire, Henley and Smith (1987) about aims of work experience showed that experience of work is necessary because:

- it offers the opportunity to pupils to prepare and adjust to the demands of the adult world;
- it assists in the development of appropriate skills and competencies, for example, life, social and work related skills;
- it assists in creating more relevance in the curriculum to the world of work and creating better pupil motivation, consultation and involvement;
- it assists in the choice of a future occupation;
- it increases pupils' awareness and understanding of the nature of industry and commerce;
- it offers, through a variety of opportunities and experiences, different models of adulthood to assist them in defining and developing their own adult identity;
- it offers a greater balance of contexts and modes of learning, moving the emphasis from didactic to experiential learning;
- it widens the resource provision for learning and adds breadth and balance to the nature of teaching styles;
- it enhances the work of school in the community and the community in the school, by using adults rather than teachers in the education process (p. 59).

The use of the out-of-school environment, however, as a learning resource may enables both young people and teachers to gain experience of the world of work, develop understanding of the mechanism of society and practice skills of a social nature that relate to living (Linklater, 1987). Work experience schemes are popular and are seen to have many benefits. Work experience is said to motivate pupils for later school work. In addition pupils appear likely to gain confidence and self-esteem, to acquire information about available careers and to have a chance to test out possible careers. Above all, they seem to appreciate being treated as adults, having genuine responsibilities and being able to sample the 'real world' (Turner et al, 1994).

Couch (1995) highlights a similar range of work experience outcomes but he goes further and draws some effects for work experience which have not been mentioned by other researchers. For example, he believes that work experience can improve "an understanding of management structures and the operation of a firm or organisation" (pp. 212-216).

3.4.6 Transition From School To Work

The final preparation, as Menchel (1984) argues, is the transition period from the academic to the world of work. This is when a person learns those skills that are vital to getting started on the job. There are a range of skills, abilities, attitudes and understandings which have been mentioned before. In fact, in a successful transition from school to work, academic skill by itself is not enough. Therefore, as Jamieson (1994) pointed out an "effective transition from school to work is a fundamental goal of education for the life of work".

Looking at the results from educational studies highlights the fact that it is crucial to examine the transition from compulsory education to the labour market within the contemporary political and historical context (Hagell and Shaw, 1996). Kerckhoff (1990) identified three main factors affecting adolescent transitions at the age 16 in the 1970s: individual characteristics, educational and labour market conditions, and other events associated with moving into adulthood such as early childbirth.

There is a tendency to say that high school graduation does not guarantee a good job, but youth employment and training programmes generally operate on the assumption that a secondary credential is a prerequisite for employability. The ability to work- to take direction, co-operate with others, exert the self-discipline, and expend the energy required to follow a task through to completion- is prerequisite to employability. Most youth programme planners and administrators believe that a thorough

understanding of what it means to work is more important than the development of specific vocational skills (Snedeker, 1982).

A variety of transition programmes have traditionally been offered by public educational authorities in the UK to assist young people in choosing a career or preparing for employment. In general, these programmes have described by Barnes and O'Connor (1987) into the categories which are presented in Table 3.4.

Programmes	*Definitions*
Experiential learning	is conducted wholly or in part through practical, community-based, on-site experience. Examples of such activities include co-operative education, internships, experience-based career education, work study, work experience, and job shadowing.
Co-operative education	is an experiential method of learning that is intended to integrate a student's in-school program of study with a community-based training station for learning. This provides students with an opportunity to apply classroom theory to a realistic hands-on experience by spending part of their time at the training station..
Internships	generally offer after-school opportunities to apply those skills acquired in school to the world of work. Academic credits are earned but a wage is not paid. The intention is to offer the student a chance to experience a career choice by giving a more realistic view of the inner workings of that career.
Work study	is a type of learning where periods of in-class instruction are augmented by learning at a place of employment for specified time blocks. These programmes do not link in-class activities, contact between school and employee is limited, and the work is completed for pay by low-income students
Career education	involves a collaboration between the business/labour/industry community and the formal education system to meet the goal of education as a preparation for work through a variety in-school curriculum and out-of-school vocational experience (Hoyt, 1986).
Work experience	is an approach in which relatively short-term experiences, usually of one or two weeks, are arranged as part of a student's overall school program. This usually takes place in the graduating year.
Job shadowing	refers to students spending time observing or "shadowing" someone in work situation. this usually involves professionals (doctors, lawyers) high-profile positions (politicians) and highly skilled people (artists) where students would not have the skills for "hands-on" experience.

Table 3.4: *School-to-work transition programmes.*
Source: *Shuttleworth, (1993): adapted from Barnes and O'Connor (1987), pp. 15-16.*

Based on these categories, it seems that there is a logical linkage between all of these processes and programmes that schools are applying for facilitating the very important matter like transition from school to work on the one hand. Also, making achievable the educational objectives about increasing the level of employability of school leavers and preparing them for a changing economy on the other.

3.5 Education-Business Partnerships

A strong partnership between education and business is seen as an important element of countries' policies to improve national competitiveness in the global economic race (Hillage et al, 1995). It can be understood by significant investment in this field by both educational and business organisations (Harris et al, 1997). Basically, "Industry and Education are two important social institutions which have some priorities of their own and some which are shared - and any partnership should commence with a careful negotiation of these such goals, some form of needs/resources audit being required before there can be a genuine sharing of one an other's assets" (CBI, 1988, para. 23).

Many employers have some sort of involvement with schools. According to IFF (1993, 1994) recent studies in Britain, showed that around three in four employers have built up links with educational organisations in order to cover their longer-term skill needs. While the partnerships links are different in their approaches and aims (Hillage et al, 1995), but they, possibly, will produce some benefits for both schools and business which will be discussed

later. Therefore, if we imagine these links on a continuum, it is possible to see two different emphases. Some companies are taking a strategic decision to involve themselves in many aspects of educational activities, some others only have a positive intention toward it.

There are varied programmes of education-business links in the USA, Australia, Canada, and UK, in both private and public sectors. Researchers have pointed out that a poor education and training system which has led to low quality performance of workers has been seen as one of the crucial reasons for declining economic competitiveness in these countries (Judge and Dickson, 1991 ; Brown and Lauder, 1996 ; Ashton and Green, 1996). One way however, for promoting an educational system to play a better role in the economic development maybe is linking these two systems appropriately.

Internationally, the economy is undergoing an unprecedented restructuring as business prepares for the coming global economy. Resources are rapidly being shifted out of low-wage businesses and the commodity sector, and into higher value-added activities, such as finance and manufacturing, where advanced technology, knowledge and service provide differentiation and competitive advantage. This restructuring, to be successful, will require a well educated, technically-literate work force (Thompson, 1996). It goes without saying that a new type of employee is needed for most of the industrial and business fields in this environment of constant change. So what type of employee will fit best? And what sort of education can prepare that type of employee? The employee who demonstrates, first and foremost, a

willingness to adapt to change. Jamieson (1996) in explaining the process of educational adaptation with economic and business requirements, has presented and compared three models which have been summarised in table 3.5. In conclusion, it is clear that there is no certain boundary between these models - they are ideal-typical constructs.

Models	*Model's Characteristics*	*Educational Perspectives*
1. ***Traditional Model***	• Fordist conception of work; • operation in small and medium size companies locally and regionally; • most of task are routine that require medium skills; • narrow specialisation, training is only in one skill; • workers are seen as complaint; • having 'right attitude' is important for workers.	• curriculum's emphasis take place on numeracy, literacy and a little technology skill; • education emphasises good discipline and respect for authority; • encouraging transition process from education to work.
2. ***Excellence Model***	• it is based only on excellent companies' practices; • Decline of unskilled tasks; • emphasis on high level scientific and technical skills; • operation in both national and international markets;	• curriculum's focus is on high level mathematics, science and technology; • emphasis on high level of competence in communication skills; • emphasis on traditional subjects and pedagogy; • encourage students to attend in higher education
3. ***Post-Fordist Model***	• focused on a few high profile companies; • flexible organising work and deploying human capital; • emphasis on new working practices and policies; • high flexibility in manpower, is required; • emphasis on polyvalent skills to do a wide range of jobs; • less supervision in work with more co-operation is emphasised; • ability to solve complex problem and creativity is important.	• new schooling system is required; • curriculum's focus is not only on maths, science and technology, but its great emphasis is in information technology; • emphasis on new form of pedagogy; • emphasis on project work, team work, and self-directed study; • teacher seen as facilitators of learning; • emphasis on cognitive learning skills with the contexts to promote transferable skill.

Table 3.5: *Models of Education-Business articulation.*
Source: *based on Turner et al (1994).*

3.5.1 Rationale For Education-Business Partnerships

What are the real reasons behind pushing education to be linked with business? What rationales have been concluded by policy makers who are optimistic and certain in the consequences of this partnership? And what are the differences between this programme and other previous schemes which were trying to make a closer relationship between education and employment sites? In developing the mission for business-educational collaboration, it is important to distinguish the real reasons for this collaboration. Different rationales for education-business links have been identified from the literature. Turner et al (1994) have highlighted four reasons which are:

- to achieve high standards, that were internationally competitive, in key subjects essential for a high technology, high skill economy.
- to respond to changes in the nature of work, and to develop ability in problem solving, collaboration, and autonomy.
- to satisfy the current perceived needs of employers to improve basic productivity, nurturing qualities such as punctuality, attendance, and willingness to work.
- to help young people become educated critics as well as creators of economic change (p. 8).

Similar elements, but with emphasis on educational roles, have been raised by Miller (1993). He insists on curriculum enrichment; staff and institutional development, and concluding mutual benefits from the collaboration between education and business. On the basis of the research, however, education-business links can be seen as playing an important educational role in developing pupils, teachers and curricula, as well as opening schools to the world of work and to the community as a whole. Progress can be speeded if realistic timetables and objectives are created, if the tendency towards

multiple innovation can be avoided, and if greater cohesion between government departments and initiatives can be achieved. It seems that there is no big difference between education-business links and other past programmes in their missions. The only difference, perhaps, is the economic circumstances such as being in a different era like Fordist or post-Fordist which have specific requirements and conditions.

However, the purpose of school-industry links is therefore clear, to create a more favourable attitude towards industry and to lend support to the idea of an industrial dimension in the secondary school curriculum. The reasoning behind this idea is probably an attempt to increase the chances of young people finding employment during a time of economic recession. It is also hoped that young people can develop a more positive attitude towards study because the new courses will be seen as more relevant to their needs. However this process is important because it is following aims such as:

- to improve the pupils' chances of finding employment;
- to provide more relevant education for young people;
- to improve the pupils' motivation to their studies.
- to give young people basic skills, knowledge and experience;
- to help them assess their potential, to think realistically about jobs and employment prospects and to optimise their employability;

- to develop their understanding of the working and social environment, both nationally and locally, so that they may understand the variety of roles possible for them to play as an adult member of society;

- to encourage them to become progressively responsible for their own personal development (DES, 1981; Jamieson 1985).

However these objectives raised a number of issues for schools. The main issues were the socialisation of the future workforce, the training of young people for employment, and the change of young people's attitudes to industry which have been addressed by different people (Bates et al, 1984 ; Whitty, 1985).

3.5.2 The Impact Of Education-Business Partnerships

If partnerships are defined as:

> "long-term, mutually-beneficial relationships, based on commonly-agreed goals in which the needs for the participants are met through the joint sharing of one another's resources" (Warwick, 1995, pp. 171-182)

Then, two crucial elements could be derived from it which are "responsibility" and "accountability". It seems that these concepts are really important in the success or failure of any effort towards common goals (Shuttleworth, 1993). For successful links, of course, engaging both educational institutions and companies are necessary. What is clear is that education, according to Warwick (1989) in the UK at all levels is increasingly showing itself ready and willing to do its part. For example, by 1995 92% of secondary schools in Britain claimed to have regular links with industry (DFEE, 1996).

The greater need, therefore, is for businesses of all shapes and sizes to do their part; and to get involved directly with individual educational institutions locally to help them prepare young people more effectively for the changing world. That is the key message of the education-business partnership. It is a working partnership based on interdependence and mutual benefit. From this side too, there is some evidence which show companies' commitment to improve the level of partnerships. Studies by Hillage (1994), Turner et al (1994), Hillage et al (1995), and Miller et al (1995) have found that the necessity of the process, now, is clear for companies. For example Miller et al (1995) show that among 50 companies, 58% of them had a written policy for links with education for effective activities (quoted in Harris et al, 1997). In spite of these witnesses, in contrast to the United States, co-operation between industry and educational institutions has traditionally been relatively weak in Europe. Also industry's influence on the curricula being developed has been weak, and this has adversely affected the real working skills of students entering employment after school (Kairamo, 1989).

However, partnerships between schooling systems and business, perhaps, could provide a range of benefits for all related parties. Adams (1988) has highlighted a comprehensive picture of those features which may make education-business partnerships more beneficial. These aspects have been presented in Box: 3.1.

- willingness to negotiate.
- agreement on aims and objectives.
- recognition of different benefits to all parties.
- shared activity.
- sharing ideas and concerns.
- recognition of barriers, constraints, boundaries.
- working together to overcome barriers.
- joint planning and development.
- joint delivery.
- joint evaluation.
- willingness to learn from each other.
- honesty and trust.
- compromise.
- focus on mutual outcomes.
- collaboration.

Box 3.1: features of education-business partnerships.
Source: Adams (1988) (quoted from Warwick 1989, p.65.

Skilbeck et al (1994) have pointed out that partnership activities will probably produce a number of demonstrable outcomes including: "increased business involvement with, and support for, primary and secondary education; improved opportunities to assist students in school and college in the transition to work; increased volume, relevance and breadth of information and guidance offered to students by careers teachers and careers services; increased numbers of young people staying in relevant and appropriate full-time and part-time education; and finally, improved access to, and participation in, further and higher education" (p.220).

The important impact of the partnerships on the community as a whole as Prais (1989), points out, it is that the community benefits from the increased school and community relations that are a result of the interaction between businesses and schools. It may allows the community to have a part in reducing the number of untrained people that could be become a burden on the community.

According to Warwick (1989), as the benefits of links are more obvious for the education side, the responsibility for developing activities further almost

invariably rests with schools. To do this, it is very important for schools to have clear objectives and deep arguments for why business should get involved. Business can benefit just as much as education. Fundamentally, education-industry links are geared to achieving better education, which is to the benefit of everyone (Moussouris and Green, 1993). However, while this may be a sufficient reason for large companies to get involved, it may seem rather too nebulous and long term to be attractive to the majority of smaller businesses, whose interest it is vital to attract if all schools are going to achieve the quantity and quality of activity they want. So school-industry links need to be a two-way relationship, with both benefiting. The benefits of school-industry links according to Warwick (1989), can be identified as follows: (1) Thriving economy, (2) Informed citizens, (3) Young people better prepared for adult world including increased pupil confidence and motivation; development of new capabilities and skills; development of new styles of teaching and learning; and increased understanding of industry.

But to obtain these benefits we might address some preconditions. Those which Rosenbaum (1995), in his review on existing connections between schools and firms in Japan and Germany has set out. These three requirements which are essential for effective school to work linkage are:

- Employers value academic skills, and they invest in efforts to get them;
- Work-bound students exert effort because school performance is relevant to their future careers; and
- Teachers have authority to give students access to jobs and to give employers dependable student evaluations.

Despite many complexities and uncertainties emanating from the nature of economic and educational ideas (Jamieson, 1996), it seems that education-business links might be further developed if the following measures are considered (Kairamo 1989 ; Turner et al, 1994):

- generating a debate about education-business links that involves economists as well as business and education;
- evaluating the longer-term learning gains from education-business links, and investigating possible economic consequences;
- concentrating education-business links within long-term reform of the education system;
- abandoning the notion of an 'education-business curriculum' and concentrating on ways of integrating education-business links into other progressions, both subject-based and social in nature;
- maintaining a central resource on developments in education-business links, research and evaluation, which can be used to inform future developments;
- building research into educational development in order to make it more useful and less retrospective;
- supporting educational programmes by industry's side;
- developing and updating of partnerships between educational institutions and industry; and,
- improving the continuous interaction between industry and education.

As a result, to provide young people with the opportunity to have a basic facility for a vocation, apprenticeship in industry could be obligatory part of all secondary education.

3.5.3 Partnerships In Practice

Building education-business partnerships is not easy. It is a difficult balancing act and serious doubts have been raised about its effectiveness (Shuttleworth, 1993 ; Raymond, 1994). Because, on the one hand, most studies in this field are descriptive rather than evaluative and they have no comments about the quality of learning process on the other (Harris et al. 1997). Donald M. Clark, president of the National Association for Industry-Education Co-operation in the US in pessimistic statements about efficiency of the partnerships has pointed out:

> Business-education partnerships - a term invented in the 80s by policy issue types who haven't spent a day in the trenches with hands-on experience in collaboration - have been a flop in terms of any impact on education....The state of practice of business-education partnerships is fragmented, unstructured, uncoordinated, unconnected, duplicative, and conducted on an ad hoc basis" (quoted in Shuttleworth, 1993, p.30).

Maybe Clark's points are too negative, but actually, the fact is that with a huge investment in making educational system link to business, the result of that are not satisfactory for young people, companies and other related parties. The best examples are UK and the US where with a remarkable investment and introducing many schemes, school-leavers still have no reasonable situation from an employment point of view. Therefore, it seems reshaping and renewing the relationship between education and business is still a bases for debate and more research will take place on it in future.

Finally, adapting with uncertain economic and business models which are changeable and ambiguous has caused a breakdown the structure and stability of education as an important social institution. Education as Jamieson (1996) says could be in a position not only to take a leading role in social and economic restructuring, but also to provide models for other organisations.

3.6 Linking Schools And Industry

> "School are better if business people are in the schools because they see the good things that go on in the schools. Businesses are better if school people are there and see what goes on in industry. It has to be a living, breathing organism. it should not be a stagnant kind of partnership."
>
> John Tobin, Siemens Corporation

The need to link schools with industry is neither a new topic, nor only a political issue. For about one hundred years schools have been urged to establish closer links with industry. Traditionally, there has been a well-

defined separation between education (theory) and industry (practice), with few areas of common interest. Essentially, education provided the overall experiences and knowledge for a student while industry trained those students for the specific tasks that would be required of them when employed. Stereotypically, educators were simply not interested in training their students while those in industry were not concerned with the overall education of their workers (Milheim, 1991). So, each sector served its own functions fairly well, with little or no communication between professionals working in each area. Consequently, while a stereotypical perception implies a lack of friendship between education (academia) and industry, there appear to be some alliances between these fields in number of discrete content areas, especially where the connections are beneficial to all involved parties. Melchhiori (1984) has described a number of ways that industry and education (schools) can work together for mutual benefit. Such linkages include general research support, co-operative support or knowledge transfer, and formal technology transfer.

Recent progress in the collaboration between education and industry, or what is called in many countries 'co-operative education' has been improved by the acceptance of the importance at all stages of linking the process of learning to practical application, preferably at a considerable remove from the classrooms (Linklater, 1987). However, according to Warwick (1989, pp. 14-21), anyone who involved in the planning for industrial links with education needs to recognise not only the existence of several, but how they may be interwoven to produce a variety of curricular patterns. He believes six such

elements, aspects or dimensions can be identified within any these sort of schemes which are:

(1) The social: 'economic behaviour does not take place in a cultural vacuum'. Whether we like it or not, industry is very much part of the world in which we live. So if education entails helping young people to understand society as it exists, then the industrial element cannot be ignored. It has to be seen as part of the wider culture to which we all belong and our schools were created to transmit.

(2) The economic: the relationship between education and the economy according to historical backgrounds was a central theme in the 1970s and has remained very much on the agenda ever since. This concern is related to the nation's future prosperity and attempts to rectify a declining situation through improvements in the curriculum and management of schools. Current moves towards greater accountability, the encouragement of industrialists to seek co-option as governors, and the emphasis on school management and staff development are all aspects of this process.

(3) The vocational: this element is closely associated with the economic, seeking as it does to prepare young people for the world of work, but is far more specific in its intentions. It attempts to ensure that each individual makes a suitable career choice and receives an appropriate preparation, both academic and practical for it. Two sets of vocational skills, competencies and attitudes are, then, involved. first, those which relate to industry in general such as communication, numeracy, problem-solving, screen/keyboard and

interpersonal/life skills; a positive attitudes towards change, self-reliance, the work itself and co-operation. The second set of requirements are those linked to specific industries or occupational groupings, and entail the school in work of both a diagnostic and preparatory nature.

(4) The affective: it has been seen how both the economic and vocational elements call for a range of inter-personal skills, developed largely through work of a practical and an experiential nature. Learning of this kind is central to affective approaches also, but the process is here observed. Through such approaches the children will be able to learn about industry; indirectly they will be learned quite a bit about themselves.

(5) The pedagogic: here the emphasis shifts from considerations originating largely outside the school to those located squarely within it, and from the affective to the cognitive. To be more precise, the starting-point of this element is the various areas of knowledge into which the curriculum has been divided. Such divisions - subjects, modules, themes, topics, etc. - are, of course, artificial constructs created at a fairly high level of abstraction to enable pupils more fully to comprehend the world around them.

(6) The instrumental: the approach is unashamedly utilitarian, subordinating every educational activity to what Skilbeck (1982) terms 'the postulated requirements of a pre-established, adult-centred cultural system'. This implies methodology veering towards the formal, whilst the purest strain of instrumentalism leads naturally towards the separation for differentiated treatment of those destined to perform various functions in later life. Here

there may be some concession to social cohesion through pastoral groupings or minimal form of curricular 'core', but this is likely to be kept in balance through the regular testing of requisite skills and competencies.

However as result of studies in the USA, those programmes which try to improve the relation between schooling and industry (work) could include the following three components:

- **Work-based learning,** that provides a planned programme of job training or experiences, paid work experience, workplace mentoring, and instruction in general workplace competencies and a range of industry-specific elements,

- **School-based learning,** that provides career exploration and counselling, instruction in a career major, a programme of study based on high academic and skill standards, at least one year of post-secondary education, and periodic evaluations of students, academic strengths and weaknesses, and

- **Connecting activities,** that co-ordinate the involvement of employers, schools, and students, much students with work-based learning opportunities, and train teachers, mentors, and counsellors (Boland, 1995).

Historically, the process of "schools and industry links" in the UK has fallen into three categories:

1. Bridging Programmes- Edgley (1978) has highlighted a gap between schools and industry and therefore schools need to construct a bridging programme which consists of work experience, information giving, and social skills training. Thus, a partnership scheme in Leeds in 1983-1984 was introduced which attempted to do this. It described the last two years of compulsory schooling as a period of transition, recognising that pupils benefit from an increasing appreciation of their own neighbourhood, city, and wider environment, especially when there is an opportunity to take responsibility in real situations (Leeds LEA, 1984). This scheme emphasised some approaches like: community education and service; residential experience for character building; problem solving exercises; training for literacy and numeracy.

2. Industrial Experiences- According to Jamieson (1985) secondary schools might include a number of industrial experiences in the curriculum. It seems that pupils needs to examine many aspects of contemporary life; for example, industry and technology, leisure and employment, careers, and community work, and the arts and crafts. Pupils could also become participants in their own learning process by means of the following: simulation exercises, role play, frequent visits out of school, and discussions with visiting speakers. Perhaps, the Schools Council Industry Project (SCIP) which supports the idea of a number of industrial experiences built into the school curriculum, is the result of these beliefs.

3. Personal Development Combined with Work Preparation- The third category is described by Varlaam (1984). These courses include a number of different objectives: systematic training to meet the needs of local employers; personal development and self realisation; community service; training for economic awareness and self sufficiency. Teaching methods include individualised learning, a negotiated curriculum, self assessment and learning by experience. Most of people who have worked in this field have stressed the importance of work experience, visiting speakers, work creation schemes, self generated employment, and mini companies (Watts, 1983; Varlaam, 1984 ; Jamieson 1985 ; Miller, 1989 ; Miller, et al , 1991).

3.7 Summary

This chapter has focused on the relationship between education and the economy and in turn the relationship between school, work and unemployment. Throughout this ongoing debate there is a tendency to raise education as an important factor in the economic productivity on the one hand, and to blame the educational system and in turn the schools for failing to provide school leavers who are fully equipped for the world of work on the other hand. Alternatively, there is a tendency to blame young people for lacking the skills, habits of mind and work experience that is thought to be required by employers.

Education is valued more than ever before as a means of promoting economic growth through assisting in the accumulation of human capital, and all advanced economies spend growing sums of public and private money on it.

At the level of individuals and their families, evidence suggests that it is not unrealistic to assume that investment in post-compulsory education is made on a fairly rational basis, given available information: education usually tends to boost earnings, and private rates of return are positive and sufficiently high to make investment worthwhile. However, qualifications are not an automatic passport to success. for some groups in the population, qualifications do not lead on to high status occupations. Furthermore, there is a more general possibility of over qualification and educational crowding-out, although the evidence so far is not totally convincing.

The belief that civil servants have access to more information than individuals leads most governments to attempt to plan provision and determine educational curricula. As with other forms of central planning, choices made by individuals nevertheless often frustrate the planners.

Finally, one recurrent theme stressed by governments of right and left is the apparent need for education to be more vocational. The evidence suggests, however, that narrowly vocational education is not attractive to individuals or firms. Educational reformers may be better employed in trying to improve basic skills of literacy and numeracy rather than seeking to impose an excessively utilitarian curriculum.

The present survey adds in a number of ways to our understanding of the role of education and training in resistance to unemployment. It pointed to skills deficiencies as one of the mediators of labour market difficulties, initially by creating problems in the transition from school to work, and

subsequently by restricting job entrants to a limited range of insecure, often unskilled, employment. Their effects are of course exacerbated in weak and declining local labour markets, but we may expect them to be felt everywhere. Though as Ryan (1991) has pointed out having basic skills clearly cannot prevent unemployment, but the results of researches reviewed in this chapter indicate if young people equip with the work-related skills by an appropriate schooling system, probably provides a degree of protection against it. Standards set in developed countries in this respect are continually rising, which places those with a relatively poor educational performance increasingly at a competitive disadvantage. So this gives particular importance to the basic skills on which all subsequent education and much work-related training depends.

Finally, the message which comes from the research is that situations of ever-growing economic uncertainty, human capital as embodied in general education seems to become ever more at a premium. It offers the foundations on which the skills for modern employment can most effectively be built, giving employers the kind of workforce they are increasingly looking for, and individuals a degree of job security. Therefore, reducing investment in education may put in jeopardy the acquisition of those sorts of skills and abilities which lie at the heart of the advanced economy and are perhaps the best protection against its failure and risks

Improvements to human resource development, both quantitatively and qualitatively, was seen as an essential precursor to continued economic growth and maintaining flexibility for future directions of a nation.

Most countries are attempting to direct human resource development in a targeted way to enhance national economic welfare, often devoting additional resources towards sectors of particular interest to a country in the short and long term.

Generally, there is a trends towards more general education and avoidance of early educational specialisation of career choice, where this is economically possible. Gradually countries around the world are attaining near universal attainment of primary education, and economic constraints, most countries are making significant provision for secondary and tertiary education, including the provision of TVE at secondary level or post-secondary level.

Graduate unemployment has emerged in a number of countries, which has led to awareness that better provision of TVE programmes directed at many of those who would otherwise wish to enter institutions of higher education is necessary for the national good, and to provide satisfying opportunities for those in this situation.

Although not universal, examples were given in a number of countries of a good levels of co-operation between educational institutions, industry and business in enhancing the human resource development of individuals and better preparation them for towards the world of work requirements. This

was particularly apparent in the form of industry placements of students undertaking related studies at an educational institution or joint conduct of programmes.

CHAPTER FOUR

Technical And Vocational Education: Major Issues

4.1 Introduction

This section of the literature review aims to discuss concepts, characteristics, policies , models, and problems of technical and vocational education in an international comparative way which focuses on some experiments and cases in developing countries.

4.2 Concepts And Definitions

Apart from attempts to plan provision of post-compulsory education in relation to specific occupational requirements, another common thread of policy in many countries is the attempt to make secondary education more work-oriented (Shackleton, 1995). The charge is that schools tend to be dominated by "academic" concerns: a concentration on knowledge for its own sake, discipline-based rather than interdisciplinary, unrelated to real-world problems and standards, and failing to focus adequately on preparation for the demands of employment. "Vocational refers to those educational functions and processes which purport to prepare and equip individuals and groups for working life whether or not in the form of paid employment" (Skilbeck et al 1994, p.3).

In general, "vocational preparation signifies the acquisition of skills, qualities, attitudes and knowledge that are judged to be important to entry into the world of work - either because the economy needs them or because the learner would otherwise be ill prepared to find employment within it" (Pring, 1995, p. 187). Implicit in vocational learning, therefore, is a view about how learning best takes place - practically, relevantly, with useful and specific goals in mind. It seems that education and training might be under wider control.

Therefore, the purpose of vocational education is to provide opportunities for people to develop occupational competencies through sequential educational instruction and training appropriate for their abilities and needs. Cobb and Neubert (1992) described the following five broad goals for secondary vocational education: (a) acquisition of personal skills and attitudes; (b) communication and computational skills and technological literacy; (c) employability skills; (d) broad and specific occupational skills and knowledge; and (e) foundations for career planning and long-life learning (p.93).

Generally, vocational education is a programme setting out to develop specific occupational skills for secondary students in general and special education. The overall goal of placing students in vocational education is probably to develop fundamental, academic, and employability skills for the world of work in a vocational area of their interest. Dowdy and Evers (1996) point out "traditionally, vocational education has been seen as the most

realistic method of assisting persons in making the transition from education to employment."

The United Nations Educational, Scientific and Cultural Organisation (UNESCO) at its Twenty-First session in Paris on the 10th of November 1989, (General conference), adopted a convention on TVE. In article. 1 in the definition of TVE says that:

> "Technical and vocational education refers to all forms and levels of the educational process involving, in addition to general knowledge, the study of technologies and related sciences and the acquisition of practical skills, know-how, attitudes and understanding relating to occupations in various sectors of economic and social life" (p.1).

This definition applies to all forms and levels of TVE in public schools or through co-operation between schools and employers. It is understood to be:

- An essential part of a general education for all students.
- A means of preparation for work.
- An aspect of continuing education.

The following conclusion could be summarised from the above definitions:

1. Most of the above definitions seem to show that the main purpose of TVE is to prepare young people for the world of work while academic education prepares an individual for further education, although there may be other ideas.

2. Different ways have been considered for preparing students for the world of work. So an individual may be prepared to acquire the skills required in the marketplace by the school, co-operation between school and enterprises, or apprenticeship on the job.

3. UNESCO's definition includes the concept of life-long education which can encompass a unified system of education instead of a divided system between practical and theoretical aspects. It also allows a flexible transition between different educational levels, educational fields of studies and between education and work. Therefore, this definition is more comprehensive than others.

4. General education has been addressed in UNESCO's definition, but as the economy is going to use high technology increasingly, in which flexible, soft and portable skills are very important, a reconsideration of technical and vocational education in order to emphasis liberal education seems necessary. It seems that this is one of the dimensions of the new vocationalism movement which has been emphasised.

4.3 TVE And Training In The Developed Countries

Discussion of vocational education and training in the developed countries is complicated by its extensive and different policies for decentralisation, with several layers of funding and responsibility, and different numbers schemes and types of organisations involved creating for preparing individuals for the world of work.

Vocational education in many advanced societies started with the central aim of preparing for employment through training at post-secondary level in manual skills for occupations. Progressively, this aim was expanded to include those countries' economic development to reduce unemployment and to increase productivity. In addition, the objective has shifted to create a

balance of both academic and vocational experiences in a common core curriculum. Cantor (1989) summarises the important aspects of vocational education and training in the developed countries as follows:

1. the role of central governments in TVE and training
2. the contribution of the private sectors
3. the attitudes of employers towards training
4. the role of women in TVE and training
5. TVE teachers and instructors training
6. education and training and the labour market needs

4.3.1 The Role Of Central Governments In TVE And Training

The role which central governments in the developed countries plays in respect to developing TVE varies considerably. In Japan, the central government has been largely responsible for the nature and content of the public educational system as well as public vocational education and training institutions but these public vocational education and training represent only about 2% of vocational education and training in the country. Most vocational education and training is run by large enterprises. Public vocational education and training institutions are administered by the Ministry of Labour and not by the Ministry of Education. Historically, the central state has played a much greater part in VET systems in continental Europe, both in terms of setting up and financing provider institutions and via the regulation of curricula and examinations (Green, 1995). In Germany, the Federal Government has considerable responsibilities for the provision of vocational education and training and it plays an important role in an administrative structure in which each of the major partners, including employers and trade unions, have a clearly-defined part to play.

In the USA, while, supporting of TVE is the responsibility of different states, there are additional federal funds according to a 5-year plan prepared by each State. However, the role of the federal government has sharply

decreased in the last decade. In the UK, previously the administration of vocational education and training were the responsibility of local authorities. Although the role of central government in the system of vocational education and training has, until quite recently, been relatively small but there has been increasing involvement of central government in recent years (Gleeson, 1990).

But the belief in the inadequacy of private sector training is the ostensible motive for government intervention in terms of regulation or subsidy. One area for which governments in developed societies probably cannot avoid taking responsibility is the secondary education system (Shackleton, et al. 1995). But it must said that governments in different societies have acted differently in this respect. Greinert (1989) has identified three models for the provision of TVE according to the level of the involvement of government.

1. The Market Model: As stated by George (1989), the government has a minor or no role in the vocational education process. The main characteristics of this model can be seen Japanese educational system as the best example of this model. In Japan students are University-oriented; technical and vocational education is determined by the needs of individuals and employers; provision, control and financing are the responsibility of the employers; and in-house qualifications are provided by the enterprises which prepare the individual to perform different tasks within the enterprise.

2. The Bureaucratic Model: In which the government has a large degree of responsibility for the planning, organising and administration of TVE.

   High degree of bureaucratisation; close connection between general education and TVE; comparability of educational standards and qualifications; and a marginal role for employers are the main characteristics of this model. Sweden can be seen as representative of this model.

3. The Government-controlled Market Model: In which a legal framework of conditions is set by government for the providers of training. The characteristics of this model are a high level of co-operation between public vocational schools and private training enterprises and the extensive involvement of small and medium enterprises. Germany represents this model.

4.3.2 The Contribution Of The Private Sectors

The private sector role varies enormously from one country to another. For examples, in Japan and the USA it has an essential role and in the UK the private sector role is growing. While in Germany it is relatively unimportant and contribution of this sector in the provision of vocational education and training is less than what is found in the other countries mentioned. These differences may be attributed to the different political philosophies existing in these countries (Sweet, 1995).

4.3.3 The Attitudes Of Employers Towards Training

In Sweden employers are considered as part of Swedish upper secondary education bodies because they take a long-term view of their skills requirements. It works well mainly because of close connections between employers and educational counterparts (Sweet, 1995). Similarly, in Japan, the development of the workforce within larger companies has been given a high priority by employers. The government and employers are placing a greater emphasis on vocational training and retraining of the work force. People's abilities are considered as important resources which need to be fully utilised because Japan is lacking in basic raw materials. The majority of training and retraining of employees is provided by companies and corporations in Japan and the USA.

In Germany however, the fact that training costs are largely borne by training firms is symptomatic of a national attitude and tradition whereby employers expect, and are expected, to provide both initial training and to a lesser extent, retraining and updating of their employees. This attitude is justified by the employer's perception of this mechanism as self-serving as they use their control of training to develop good work habits and a highly skilled workforce. It also provides social stability to their employees by giving them status.

Although, many employers, around three in four, in the UK have some sort of partnerships with schools (IFF 1993, 1994), by contrast, the country has had weakly institutionalised arrangements for youth transition (Brown and

Behrens, 1996). The main reason that larger companies are reluctant to invest in training is that they are afraid that the money spent by them in training may be lost as trained skilled workers may move to another company which does not provide similar training. However, the school curriculum and its organisation in Britain, France and Germany is criticised by employers because the preparation for entry to work is inadequate and inappropriate (Shackleton et al, 1995). The main complaints in some developed countries have concerned the low standard of literacy and numeracy in school leavers; schools tend to be overly academic and fail to equip students with basic educational skills; and the lack of communication skills, and skills in co-operation, which are essential for successful employees (Noah and Eckstein 1988). Owen (1986) stated that industry and business criticise graduates from vocational tracks as not possessing either adequate academic or employability skills.

4.3.4 The role of women in TVE and training

The training received by women is of growing importance because their role in the economies of most developed countries has increased significantly in recent decades and seems set to increase still future (Shackleton, et al 1995). Although, the contribution of women to the economy, through their involvement in the workforce, has grown steadily over the past two decades, in almost all countries, they are restricted, or restrict themselves to a limited number of occupations such as primary school teaching, secretarial work and nursing (Dale, 1985 ; Mckinnon et al, 1994 ; Shackleton et al, 1995).

In Japan women tend to be employed in lower level jobs in industry and business. In the USA, UK and Germany, even though there is a lot of equal opportunities legislation, vocational education and training for women still mostly leads them to occupations which have a lower payment, have less security and fewer opportunities for promotion.

This picture, which appears common to most countries, has been seen by human capital theorists as a rational response to the what Polachek and Siebert (1993, p. 164) call "difference in life cycle labour force participation", because, perhaps, women expect to choose different educational paths and different occupations and spend less time in the labour force (Shackleton et al, 1995, p. 229). However, change is taking place, and younger cohorts of women are more highly educated and they are entering a wider range of occupations than previous generations. It means that they are likely to invest more in education and training and to participate in the labour force to a greater extent generally. In the developing countries, women still have not such a right to be seen equal to men in order to receive education and participate outside the home, because of traditional and cultural and conditions.

4.3.5 TVE Teachers And Instructor Training

Another vitally important aspect of vocational education and training in the developed societies is the training and development of teachers and instructors of vocational subjects. In this regard, too, practice varies widely from country to country. For example, in Australia it is mandatory for

teachers in the Technical and Further Education Colleges to take a professional training course. In the UK it is not compulsory to follow such a professional courses. Across the USA, from State to State, there are a considerable differences in such requirements.

There is a serious shortage of vocational education teachers in some USA high schools which has resulted in a relaxation of the requirement for teacher training in some states. Although some progress has been made in the provision of initial teacher training in the UK in colleges and industry, more investment is still needed in staff development.

4.3.6 Education And Training And The Labour Market Needs

As I quoted from Wilson (1995) so far in Chapter Three, the competitive nature of the international market place and the rapid changes in the demands of the market as the result of technological change has raised the need for flexible educational and training systems which are more responsive to individual circumstances and adaptable to labour market needs.

It seems that the Japanese and German training systems are more powerful in comparison with other industrial countries, although they have different systems of TVE and training. The following part will describe in depth the characteristics of the Japanese and German systems in terms of comparison different schooling models for the preparation of young people for the world of work.

4.4 Models Of Schooling For The World Of Work

Studies of the relationship between education and employment have distinguished various models on the "how are the schooling systems around the world preparing students for the world of work". Even though it is difficult to draw a clear boundary between these traditions and it would be better if we imagined them on a continuum, but it is possible to highlight some major aspects of each pattern. Cantor (1991) stated that the Organisation for Economic Co-operation and Development (OECD) identifies three models or patterns of provision of vocational education for the 16-19 age group in the developed world:

1. The Schooling Model: in which emphasis is on the full-time schooling until age 18. For example that seen in Sweden.

2. The Dual Model: Highly developed system of apprenticeship and continuing education in which there is a close co-operation between Education, Business and Industry. West Germany and France best represent this model.

3. The Mixed or (Scattershot) Model: Comprises elements of both schooling and dual Models. The United Kingdom is an example of this type.

Green (1991) identifies three systems in European countries found in the institutions responsible for offering vocational education and training for post-16 students.

1. An employer-led, work-based system of training through a well established apprenticeship. Germany is best example of this system.

2. An Education-led, College-based system in which a general education and vocational training are offered in different institutions. France, Italy and Japan are examples of this system.

3. An Integrated Education and training system. This is the same as the second system except that both education and training are integrated in a single comprehensive institution. Sweden best represents this system.

In another classification of existence patterns of vocational education by Skilbeck and his colleagues (1994) two models: *'Schooling Mode'* and *'Working Life Model* have been distinguished. These models, which were seen as two different sides of one continuum, have concluded regarding the answers of the following questions:

- How far should the education system of schools and like institutions be involved in preliminary preparations for working life? How much and what sort of vocational education should this system provide? How generalised, foundational or specific should such educational provision be?

- To what extent should the component of formal and direct educational preparation for working life be in schools and like institutions or in the workplace? Where and under whose authority should that provision be located? Where is such learning best achieved?

In the definition of these models, they describe the schooling model as one in which the primary responsibility for vocational education lies with the school authorities and main proportion of students' time is in the school or other formal educational institution rather than the work setting. While in the working life model primary responsibility for the vocational lies with employers or in a shared arrangement with school authorities, and the major locus of vocational learning is in the workplace, but with some off-the-job formal educational provision (Skilbeck et al, 1994, p. 64). According to the above study, the American and Japanese educational systems were considered as the schooling model and the German dual system as the working life model. Education in countries such as France, Sweden and Britain are located in the middle of the continuum. Perhaps, the educational traditions in these countries will be considered as the mixed model. This can be confirmed by the data have been reproduced in Table 4.1.

	All upper secondary			*General*			*Tech-Voc Education and Apprenticeship*		
Country	Total	Male	female	Total	Male	female	Total	Male	female
Japan	94.0	92.4	95.7	67.5	64.9	70.1	26.6	27.3	25.8
France	84.9	82.8	87.1	37.1	30.6	43.8	47.8	52.2	43.3
Britain	76.9	74.7	79.2	63.0	62.2	63.9	13.5	12.1	15.0
Germany	118.1	123.5	112.5	24.0	23.6	24.5	94.1	99.9	88.0

Table 4.1: *Number of upper secondary full-time enrolees per 100 individuals in the age groups 14-19 year olds in Japan, France, Britain and Germany: 1988.*
Source: based on Medrich et al (1994), p. 76.

It seems that each one of these models has its own self characteristics which reflect its economic, traditional, and cultural backgrounds. And for that reason it makes it practically impossible for one country to copy another country's model completely. For example, although the dual system of Germany is one of the powerful systems in providing a stable vocational

education in the long-term (Skilbeck et al, 1994), but American would likely reject certain elements of that system (Finegold, 1993). Indeed, there is no question about the quality of the German workforce skills and the youth preparation system for employment, but one of the big weaknesses of this approach is early specialisation of young students which has been criticised by numbers of researchers (Moussouris, 1993).

The German system tracks young people at the age of 10 into separate academic, technical, and vocational schools. It then links school performance closely with the quality of subsequent apprenticeships, and hence career opportunities, creating very strong incentives for students to work hard in school (Lee, 1994; Medrich et al 1994; Skilbeck et al, 1994). The manifest rigidity of the German model, therefore, in forcing early occupational choices through its craft-based training system serves to highlight the attractions of Japan's more academic approach to workforce preparation - a system underpinned by intellectual foundations laid down by the Japanese secondary school (Dore and Sako, 1991). Indeed, the intensive academic preparation of the Japanese high school fosters learning capacities that prepare its youth for careers of life-long learning across the multiple job changes that the 'flexible rigidities' of the lifetime employment system necessitate (Medrich et al, 1994). Thus, regarding the employers' attitudes and the economic direction towards changes, it seems this sort of schooling which is uniquely suited to the cultivation of intellectual skills workers, is more attractive. So these high schools need to function effectively within the

high-tech confines of the flexible production systems which the Japanese have pioneered.

4.5 Vocationalisation Of Secondary Education

Vocationalisation of education according to Skilbeck and his colleagues (1994, p. 4) has two dimensions. First, it is a dimension of education for life, for living of which work in some form is all about universal attributes. In respect of this aim vocationalism is a process or activity, the imparting and the acquisition of broadly defined skills and knowledge believed to have a discernible relationship with the capabilities needed for productive work and required of workers, now and in the future. Second, vocationalism is a function, whereby the education system services the workings of the economy, deriving its purpose and rationale from some assessment of economic need requirement, such as trained labour force for the labour market.

The vocationalisation of secondary education is seen by Lauglo and Lillis (1988) to mean curriculum change in a practical direction. It has been defined by Bacchus (1988) as:

> "efforts by schools to include in their curriculum those practical subjects which are likely to generate among the students some basic knowledge, skills and dispositions that might prepare them to think of becoming skilled workers or to enter other manual occupations" (p.31).

Bacchus mentions that the incorporation of practical or industrial arts subjects in the school curriculum as part of a general educational programme is an essential element in such a vocational curriculum. The Manpower Service Commission, National Economic Development Council (1984) and Cantor

(1989) defines vocational education and training as learning activities which contribute to successful economic performance. Marklund (1988) defines the term "Vocationalising of Education" to denote all the measures within school and also measures involving co-operation between schools and the world of work, aimed at preparing the individual for a future occupation and livelihood, whatever the social status of the job concerned.

However, diversification of secondary education is being considered in both the developed and developing countries. The main question needs to be addressed is: why is the diversification of secondary education sought? In the international literature, a number of reasons and different opinions are put forward.

4.5.1 Employment Impacts

Vocationalisation of secondary education may be is one answer for decreasing the high rate of youth unemployment experienced world-wide particularly in the developing countries (Abrokwa, 1995). For example, during the last decade, there has been increased emphasis by politicians in most of developing countries, on the diversification of education in order to introduce work-related skills as an integral part of the curriculum of schools at the secondary education level. They also believe that this may offer a partial solution to a range of the social and economic problems facing their countries, particularly the high rate of youth unemployment, and the increasing cost of public education.

The conference of African Ministers of Education in 1976 came to this conclusion that education should be provided in their countries in such a way that a close link between school and work should be maintained, and barriers reduced between manual and intellectual work, between theory and practice, and between rural and urban areas. They also recommended that the curriculum of both compulsory schools and higher education should include productive practical work as an essential component by offering TVE at all educational levels (Gustafsson, 1988).

As Lauglo and Narman (1988) stated the main goal for the diversification of the secondary school curriculum is the provision of skills and the encouragement of attitudes which will be useful in gaining jobs. They added that, in developing countries, emphasis is also given to acquisition of favourable attitudes towards living and working in rural areas and the preparation for self-employment. But according to Al-Aaqib (1974) the main reason which has made the authorities spend the little available resources on the expansion of academic education, is political pressures, whereas the actual need for expansion is in the field of TVE in order to bring about economic and industrial development. Therefore rapid technological change has resulted in a shift in the nature of the job requirements which now require both an academic and vocational component within preparatory programmes.

It seems that it is, politically, often more gainful for governments of developing countries to expand academic education and find a place for

every pupil. Also, it seems that vocationalisation of education is unable solve unemployment problems without a good economic development strategy.

An adequate survey of unemployment across the whole structure of the labour market in Iran, is one of the reasons for lacking of information in this respect. The only official source of data concerning unemployment is produced by the Ministry of Labour and Social Affairs by updating the number of individuals who have been registered in different offices scattered in the main cities throughout the country. This does not reflect all unemployed people. Since the early 1970s the rate of unemployment among the school leavers has increased sharply.

In the mid 1970s the Ministry of Labour and Social Affairs expanded vocational and training courses with the aim to compensate to the shortcomings of the secondary schools in preparing students for the world of work. These schemes has been reformed and restructured since the finish of the Iran-Iraq War in 1988. Several factors are felt to be responsible for the high rate of unemployment for Iranian secondary school leavers:

- As a young population's country, Iran has faced to the increasing number of secondary school leavers in recent years. Tables 4.2 to 4.3 show how the number of students in academic secondary schools has sharply increased during last two decades from 405,009 in 1975/1976 to 2,712,560 in 1995/1996, while students in technical schools increased from 150,509 to

228,241 in the same period of time. The former increased by 570% compared to 52% for the later.

Year	Number of schools	Number of students		
	Total	Male	Female	Total
1975/76	1557	268042	136967	405009
1994/95	7968	1450252	1262308	2712560

Table 4.2: *Number of academic secondary schools and students in Iran (1975/95).*
Source: Co-ordination Department of Development Planning, Ministry of Education 1996.

Year	Number of schools	Number of students		
	Total	Male	Female	Total
1975/76	718	121444	29065	150509
1994/95	1095	178811	49430	228241

Table 4.3: *Number of TVE secondary schools and students in Iran (1975/95).*
Source: Co-ordination Department of Development Planning, Ministry of Education 1996.

- The location and the structure of business, industry and the service sector is another significant factor. Almost all companies have been State owned since the 1979 revolution. Following the first five-year economic development plan a policy of privatisation was emphasised which led to several companies and establishments been sold to their employees, or many companies been established by the private sector. Additionally the static condition of the country's industry with little expansion owing to the reluctance of foreign as well as local investors to invest because of the political instability in the country mostly after the Islamic revolution, because of war and specific foreign policies, is probably the most significant issue.

- The structure of the school curriculum has a remarkable impact. In this respect, secondary school leavers' employability skills also might be considered. The argument is that the curriculum presented in schools has

concentrated on a range of academic subjects which can not prepare students properly for the world of work. Although this curriculum changed superficially immediately after the revolution of 1979, the main structure is that which existed since the Shah's time. The curriculum, in other words, has not been designed to meet local community and national needs.

- The crises in the country's economy as the result of a long-term war and Western countries' sanctions and other reasons mentioned in Chapter 2 is another factor. However, there has been very good progress in the years of first and second economic development plans (Aziz-zadeh, 1994; Shokohi, 1995).

Among developing countries, Colombia and Tanzania have experienced a diversified educational system in the 1970s which is similar to Iran's educational system at the secondary level. Psacharopoulos (1988) selected studies in Colombia and Tanzania to investigate whether the outcomes of a diversified education are different from purely academic and purely vocational schools. In Colombia the diversified schools are called INEM (Institutos Nacionales de Education Media) and a combination of academic and pre-vocational subject tracks are offered in a six-year programme with the same purpose. In the first two years, students study pre-vocational subjects to acquire the knowledge and career options in different trades. In the second two years they follow vocational orientated courses e.g. in agriculture, and commerce, as well as taking additional academic studies.

A strong emphasise is given to vocational courses which in the last two years can be devoted to further specialisation in metal work, construction, electrical mechanics and the like, or students can concentrate on academic studies. Besides INEM, CASD (Centrros Auxiliares De Servicios Docentes) exists which offers special 'hands-on' training in those vocational skills considered important for students in the formal school setting. The study in Colombia highlighted two set of outcomes. Firstly, what is learned in school and secondly, what is achieved later in post-school, economic activity.

By using three sets of questionnaire for students, head teachers, and graduates, the research's focus were given to comparison between the socio-educational inputs and outputs in the longitudinal study which was carried out:

- Observable effects while students are in school.
- Observable effects one year after graduation.
- Effect some time after graduation.

Regarding the initial destination of graduates, the results indicate that no major differences were found in post-school activities between INEM graduates and other non-INEM graduates. This is shown in Table 4.4.

School type/ subject in 1981	*study*	*work*	*study /work*	*other*
INEM	37.0	29.0	10.0	24.0
Control	37.0	30.0	11.0	22.0
Overall	37.0	30.0	11.0	22.0

Table 4.4: *1982 Destination by school type and subject (Post-school Activities 1982).*
Source: *Psacharopoulos (1988).*

Subject	*INEM*		*Control*	
Academic	29.6	(39.1)	28.7	(28.7)
Vocational	28.1	(39.3)	33.7	(43.9)

Table 4.5: *Probability of being in full-time work in 1982 by school type and subject.*
Source: *Psacharopoulos (1988).*
Notes: Figures in parentheses includes those who both work and study.

As Table 4.5 shows those coming from the vocational schools have more opportunities to be employed one year after graduation than those coming from other schools.

Subject	*School type*	
	INEM	*Control*
Academic	21.2	21.6
Vocational	25.6	26.4

Table 4.6: *Period of unemployment before first job by school type and track (in weeks).*
Source: *Psacharopoulos (1988).*

Table 4.6 shows that those who have followed vocational courses in INEM or control schools have experienced a longer period of unemployment.

School type	*Mean earnings (in Pesos)*
INEM	9854
Control	9980
Sample	9887

Table 4.7: *Monthly earning by school type (in Pesos).*
Source: Psacharopoulos (1988)

As shown in Table 4.7, the result of the study reveals that earning differences are slight but that academic school graduates earn more in comparison to the rest.

In Tanzania, the socialist government controls both education and economic growth. For this reason, diversification of education has not been introduced simply in order to supply middle level skills as part of human resource requirements. The main reason for diversification is a commitment to a socialist philosophy which emphasises the ideals of productive work in education. Students are required to be acquainted with practical skills in addition to academic subjects in order to cope with the Tanzanian philosophy of self-reliance and self-sufficiency in its need for skilled human resource.

Psacharopoulos in his study about the effect of vocational education on the employment of graduates from secondary schools in Tanzania, found that, although it was expected that graduates from agricultural, technical and commerce based schools would be employed in a shorter period of time after graduation than academic school graduates, the result showed that a year on from graduation, while 13 per cent of students in the academic courses were still looking for job or further education, the rate for students in the technical courses was 18 per cent.

In another study which has been carried out by the division of Technical and Vocational Education and Training, National Training Board, Ministry of Education in Trinidad and Tobago in 1982/83 in order to measure the labour market performance by diversified secondary school graduates (Chin-Aleong, 1988), the outcomes were identified as:

- Do they find jobs related to their original training?
- How quickly do they find employment?
- Comparisons with other graduates in relation to rate of placement.
- Earnings.
- Job satisfaction.

Stream	*Mean*	*SD*	*N*
Pre-technician	12.5	9.1	123
Academic	9.6	8.2	71
Specialised crafts	7.9	8.4	208
All cases	9.6	8.8	402

Table 4.8: *Time taken (in months) to find the first full-time job (by stream).*
Source: Chin-Aleong (1988) pp. 293-333.

Stream	*Mean*	*SD*	*N*
Pre-technician	2.37	0.88	119
Academic	2.26	0.75	71
Specialised crafts	2.07	0.85	203
All cases	2.20	0.88	393

Table 4.9: *Mean job satisfaction by stream.*
Source: Chin-Aleong (1988) pp. 293-333
Scale: 1= very satisfied; 2= satisfied; 3= dissatisfied; 4= very dissatisfied.

Stream	*Mean*	*SD*	*N*
Pre-technician	2.63	0.89	114
Academic	2.64	0.91	70
Specialised crafts	2.37	0.93	199
All cases	2.50	0.92	383

Table 4.10: *Mean preparedness by stream.*
Source: Chin-Aleong (1988) pp. 293-333
Scale: 1= very satisfied; 2= satisfied; 3= dissatisfied; 4= very dissatisfied.

Stream	*Gender*								
	Male			*Female*			*All cases*		
	Mean	*SD*	*N*	*Mean*	*SD*	*N*	*Mean*	*SD*	*N*
Pre-technician	687	364	063	547	261	51	624	328	114
Academic	605	299	027	620	371	40	614	341	067
Specialised crafts	644	419	165	577	264	31	634	399	196

Table 4.11: *Average monthly salaries of graduates by gender and stream (in Trinidad and Tobago Dollars).*
Source: Trinidad and Tobago Ministry of Education (1983) quoted in Chin-Aleong (1988)pp. 293-333.

The result of the study indicates that graduates from specialised crafts schools:

- find their first job in a shorter period of time after graduation than other streams;
- are on average more satisfied with their jobs; and
- are better prepared for work (see tables 4.8 to 4.11).

In all these three measures however, other groups are approximately around the mean. The mean earnings are $634, $614 and $624 for specialised crafts, academic and pre-technician graduates respectively but there are sharp variations between men and women. These results show that there is no significant difference between graduates from these streams in finding their first job, satisfaction with their jobs, preparation for jobs and earnings. Generally the results support the findings from Colombia and Tanzania in that the expected outcomes have not been realised. Of course many additional factors may be contributing to these results; including, for

example, the overall design of the research and the time for collecting data in the case of Colombia.

In a study in China about secondary TVE school graduates, Min (1987) concluded that TVE graduates are working in jobs closely related to their original training which are more productive than general senior high school graduates having the same jobs. He believed that the better technological and psychological preparation for employment in these courses have led to the higher level of satisfaction of TVE school graduates, and the specific technical skills offered to them which met the skills required in their jobs.

Several studies in industrialised countries have been carried out to find the effects of TVE on labour market outcomes. Wages, number of job changes, employment rates, job satisfaction, and satisfaction with education preparation for labour experience were all used as indicators of labour market outcomes. Shanahan (1989) in his study of the effect of vocational education on employment outcomes of the non-college-bound high school graduates of an urban school district in the US Rocky Mountain Region concluded that no significant relationships exist between credit earned in vocational education and hourly wages, number of job changes and job satisfaction.

The study's results indicate that graduates employed in occupations related to their vocational training, earned significantly higher than those employed in occupational areas unrelated to their vocational training. Additionally a positive relationship was found between credit earned in vocational

education, and satisfaction with high school preparation for employment. The respondents entering employment after graduation from high school considered English, mathematics, vocational education and social studies as useful to their jobs.

In a study of selected school districts in Texas, USA, Carter (1989) found that firstly, vocational education has a significant effect on wages. The wages of vocational education programme completers were significantly higher than their non-vocationally trained graduates. Secondly, many vocational education programme completers have a significantly lower unemployment rate than the expected national equivalent rate. For example, the unemployment rate for auto mechanics programme completers was 14.4% while the equivalent rate was 16.32%. And thirdly, the drop-out rate for vocational education is lower than for non-vocational education students. These results have been confirmed by Miller (1990) who found that high school vocational training was considered as a positive factor in the present job of graduates from vocational secondary school. Also Garrity (1989) found that vocational graduates in rural Northwest Pennsylvania earned more than academic graduates. In contrast, Wilms (1988) has highlighted that "little persuasive evidence exists that high school vocational programmes, compared with other high school programmes, pay off in placement and earnings" (p.88).

Very briefly, the findings from relevant research about the labour market outcomes in the developed world are unstable. Some studies show higher

earnings and productivity of vocational school graduates while others show either no differences or negative results in comparison with academic general education graduates. In the same way studies in the Developing Countries show no significant differences but most of the results tend to be negative. This may be attributed to the low economic and industrial development which resulted in few opportunities for employment and many problems in the nature of technical and vocational education in these countries which will be discussed later in this chapter.

4.5.2 Irregularity In The Supply Of Skilled People

Diversification of secondary education has also been mentioned as response to the national development needs for skilled people. Chrosciel, (1989) argues that:

> "A continuous but regulated supply of different types and levels of well-trained and skilled human resources is one of the essential prerequisites to economic and industrial development. It has long been recognised by industry, crafts and commerce that vocational training is in itself an investment, as the quality and standard of goods produced and of services rendered depend to a large extent on the level and degree of skills that the staff involved possess" (p.41).

In addition to the above statements, Powell (1988) has pointed out that education and training can play an important role in facilitating adaptation to structural changes in the economy and in helping to equalise employment opportunities, when they are properly administered.

Unfortunately, in addition to the lack of vocational elements in the general secondary education, the system is not equipped with a well-organised liberal education. And also the technical and vocational programmes, and training at the secondary school level in Iran, are unable to prepare a

qualified and skilled workforce for national development. This problem is common among other developing nations. The shortage of skilled and semi-skilled people in the workforce has been reflected in different studies (Middleton et al, 1993).

The shortage of qualified labour force in the different levels was the main reason that the previous national socio-economic development plans did not achieve their anticipated outcomes. The consequences of this problem forced the government in Iran towards two policies. First, an emphasis to employ foreign workers which increased following the oil crisis in 1973. Second, emphasising human capital investment which put Iran as the first country among the top five developing countries in sending students to study in abroad in 1983 (Coombs, 1985).

The 1983 International Symposium convened by UNESCO about the transition of technical and vocational school graduates to work, concluded that the following problem existed in vocational and technical education and training in the Third World countries which may be contributing to the shortage of skilled and semi-skilled people in the labour market.

- No technical or vocational exploration, preparation or training is offered below secondary school level.

- Vocational workshops are poorly equipped. It has been mentioned that there was a shortage of equipment and other school facilities. The failure of secondary schools to achieve objectives is because of the poor school

environment. Schools lack proper libraries, laboratories, workshops and the like.

- The lack of qualified vocational and technical teachers and trainers is an important factor in the failure to achieve to educational goals.

- The irrelevancy of skills taught in vocational and technical schools to the labour market needs. The gap between curriculum with technological development is unreasonable. Academic subjects occupied most of the timetable. There is no any link between school and industry in particular, and with the community in general.

- The responsibility for the planning and administration of technical schools and vocational training centres is scattered among different agencies.

- There is a lack of interest in this kind of education among students and their parents because of their belief in academic education as the means to high-status occupations.

Ebtekar (1994) highlighted the same problems regarding technical and vocational education in Iran. A range of similar problems were identified by Falunawa and Aiscku (1982) in African countries, by Shehab (1987) in Bahrain and by Van Steenwyk (1987) in Honduras and by Davis (1991), Buechtemann (1994), Simmons (1994), Abrokwa (1995), in other developing countries.

Most of these problems are contributing to the system's ineffectiveness in producing qualified skilled people. We can add to this the lack of human resource forecasting which has resulted in an imbalance of graduates from different fields of study, and the irrelevance of the courses and fields to the regional and local economic environments. This problem is raised by central-based curriculum planning which does not pay attention to the regional differences.

4.5.3 Social Impacts

It is believed that the existing academically-oriented educational system is providing inequality between the small elite groups who have been successfully educated and those who failed to complete their studies for different reasons. In Iran where only a small portion of secondary school leavers have the opportunity to attend higher education (about ten per cent), the problem of inequality is obvious. Although the intake for higher education sharply increased during the last two decades from 35,000 students in 1983 to about 300,000 in 1995/96, the total number of students has increased from about 120,000 to 1,200,000 (including Non-profit Azad Universities and Non Attendance Universities) in 1996.

The vast majority still will reach the end of their education. The question addressed is whether the diversification of secondary education will enhance equality of opportunity for students in the both academic and vocational streams to access to higher education. It remains to be seen after the recent reforms in the structure of secondary education whether all students in all the

courses can enter the higher education system. Also, it is expected, for traditional and religious reasons, that female students will be concentrated in specific fields of study and that fewer of them will follow technical and vocational streams. As table 3.7 and 3.8 show the number of girls in technical and vocational schools is 49430 and almost all of these are following home economic, clerical and commercial studies compared to 1,262,308 following academic studies.

4.5.4 Educational Impacts

There is tendency to believe that technical and vocational education is one of the suitable types of education for low academic ability students, so that less academically able students may be channelled into vocational and technical tracks while students with high ability may be selected for academic tracks (King 1993). This may be the reason which explains the practice of allocating students to different tracks in Iranian secondary schools. This may have been valid when students needed to be prepared for specific and simple jobs, which was the nature of many jobs in the past, but may not the case now. Rapid technological change has created a need for occupations which can not be performed without having the combination of both academic and vocational education.

However, although, the reformed secondary education in 1991 has given emphasis to providing any required facilities for all students with different level of abilities on the one hand. The new branch of 'Kar Danesh' has been created to help those students who are unable or do not want to continue

further study on the other. But the questions which have not been answered by the strategy are: how will students be selected for different streams? How can we change the negative perceptions of students and parents towards technical and vocational education? How can the curriculum be designed so that the theoretical and practical aspects be incorporated with each other? Of course, this practice has also contributed in the poor performance of technical and vocational school students in the labour market and in their scores in the final examinations for entry to higher education.

4.5.5 The Parents' And the Youth's Attitudes Towards Work

One of the crucial factors affecting the failure of technical and vocational education in most developing countries is negative attitudes of students and their parents to it. Therefore, the Ministry of Education and other related agencies have a great responsibility to changing of these groups' attitudes. For this reason during the second five-year plan, the Ministry of Education in Iran has been giving further financial support to having some special programmes and projects which involve parents in order to improve their ideas about these fields. The study of the effect of technical education on the aspirations and expectations of secondary school students in Kenya by Lauglo and Norman (1988) concluded that parents positive view to the TVE has had an effect in making students interested in technical or practical work as a future career.

4.6 Reluctance To Invest In TVE

Even though the vocationalisation of education, particularly secondary education has been focused on solving school leaver unemployment even in the developed societies, until recent years governments have been reluctant to invest in the vocationalising of secondary school levels. This may be attributed to some or all of the following reasons:

First, there is a high cost of introducing practical subjects into schools especially when they are to be introduced quickly, and on a large scale. It can be seen easily how big a cost it is for a country like Iran which wants to introduce these courses for a population of three million secondary school students. This is because of the expensive requirements for equipment, materials, curriculum development, teacher training, personnel and management requirements and maintenance. Also, there is the high cost of the small class sizes required for pedagogical reasons (Muserva, 1989; Dunham, 1989).

Second, by contrast three decades ago, UNESCO's curriculum guidelines dropped occupation-specific education in the schools (Dougherty, 1989; Bowman, 1990). Similarly, changing patterns in World Bank investments in vocational education and training provide some evidence to suggest that all types of job-related training have been difficult to establish in low-income countries (Middleton, 1991). Middleton, (1988), in his review of twenty two middle-income countries, has specified Brazil, Jordan and Korea as having developed an effective industrial training system including formal and

informal secondary and post-secondary systems. The same idea was shared by Psacharopoulos and Patrinos (1993). These systems are considered productive. The productivity is reflected in the high rate of placement of graduates, high internal efficiency in comparison with other similar countries, and the degree of employer's satisfaction with graduates. These systems can be considered as examples of successful practice in developing countries.

According to Middleton (1988, 1991), Middleton et al. (1993) and Haas (1994), in order to produce a productive and successful practice in TVE in developing countries paying close attention to the following features is essential: long term perspectives with multiple investment; expanding industrial employment; small-scale beginning and incremental expansion; responsive planning; early and continuous involvement of employers; evaluation of policy and management capacity to match system complexity; more attention to alternative financing resources; investment in quality; flexibility of curriculum and institutional design.

Third, perceptions are common within Iranian society that TVE has a low status. Where students and their parents have this view, students are reluctant to follow this line of education which they perceive will lead them away from higher education and high status occupations. A number of researchers have commented on factors which impinge on the status of technical and vocational education and in some cases proffered solutions. Many researches have noted the low status that is often attributed to TVE

which is reflected in the attitude of students, and potential students, their parents, employers, professional bodies, teachers, government and educational administrators (Haas, 1994). Therefor there is a feeling in Iran and other developing countries that TVE is a second class type of education with no valuable end-point. However, there has been an apparent reluctance among students to enrol in TVE programmes in school. Higher status was given to academic studies than to TVE which has been considered as a low status education leading to blue-collar jobs.

Fourth, academic requirements for entry to higher education make it difficult for vocational and technical school leavers to be accepted in higher education institutions. The existing procedure for the entrance into all higher education institutions is to consider only academic subjects for this purpose. Although most of the vocational and technical school students' time is devoted to technical subjects, they receive no strong academic bases for technical subjects. In Iran the entrance examination for university is an academic-based competition, so that there is little opportunity for such students to attend higher education. For example, in the 115 questionnaires returned by university students in this research, there was only one student who had graduated from technical and vocational schools. The question which needs to be addressed here is how can we expect students and parents to choose such an education as an option.

Rossetti et al, (1990) found the main reason for students not enrolling in vocational education is the perception that they cannot subsequently register

vocational and college courses. Similar views were mentioned by Price (1985), Plihal Ernest and Rehm (1986), Fratz, Strickland and Elson (1988). The 'back to basics' movement in the United States of America recommends that the academic requirements of public high schools and training institutions should be strengthened. Marie, (1988) believes that this movement would have a major effect on secondary vocational education programmes because there would not be room in the curriculum or in the schedules of individual students to accommodate both.

He continues to argue that the assumption made in several reports by prestigious groups about American educational reform and improvement, for example, Nation at Risk, (1983), the Carneale Report (1983), Academic Preparation for College (1983), the Paldela Proposal (1982), Tomorrow's Teachers (1986) and What Work (1986), all suggest that the most suitable way for preparing all students for life is to add more academic courses to the curriculum. As the result of this movement many unanswered questions have faced educators. Shanahan, (1989) mentioned some of these questions: how can a curriculum be designed to meet the diverse needs of all students? How will the increased academic requirements affect participation in vocational education?

To provide a reasonable balance between academic and practical subjects in vocational and technical education, the following solutions according to Marie (1988) maybe are workable:

- The need to balance the academic and vocational programme should be clearly stated.

- Vocational teachers should be trained to have the skills to incorporate the practical and academic aspects of different subjects.

- Attention should be given to the recruitment of quality students.

- The necessary changes should take place in the curriculum to make time available for vocational subjects. Emphasis should be given to attitudes towards work rather than training for specific skills. Technology should be an essential element in any vocational programme.

- Vocational teacher training programmes should be prepared in a way that will produce technology-oriented teachers with skills in computing, teaching conceptual and abstract thinking, and skills on how to incorporate basic subjects into the vocational classroom. A similar view was stated by Phelps and Hughes (1986).

Fifth, the availability of well trained practical subject teachers is crucial, as is investment in the training of teachers well ahead of any change. Teachers for TVE subjects should be well trained and should have, at the same time, industrial experience. Research by UNESCO in the Asian countries indicates that almost every country in the region had some problems with the supply of TVE teachers (Haas, 1994). In Iran the lack of proper technical and vocational teachers is one of the biggest obstacles that TVE is facing (Ebtekar,

1994). Such teachers, with these skills and experiences, are not readily available.

For this purpose, in-service training could be introduced in order that current teachers can gain industrial experiences and update their skills. Full time courses may be introduced to produce technical and vocational teachers for the country's long term needs. But this may result in two problems. Either a rise in salaries of the trained teachers will be needed to keep them in the profession, or they will leave to work in industry, and self-employment. To attract technical and vocational teachers, different forms of incentives are essential. These may be in the form of higher wages, scholarships to study for higher degrees or incremental promotions.

Sixth, the experience of other developing countries following the vocationalisation of their secondary schools has raised some related problems. Reviewing of these problems, perhaps, by others is useful, because it lets policy makers consider them during the development of their educational systems. For example, Tanzania, Colombia, Zimbabwe and Sierra Leone show that the expected results from the diversification of secondary education have not been achieved (Lauglo and Lillis, 1988).

Psacharopoulos (1988) in his study of curriculum diversification in Tanzania and Colombia provides evidence that the objectives stated for the diversification of secondary school curriculum were not achieved. The result of the study indicates that: no difference is found in the opportunity of academic and diversified school leavers to find a job; students tend to change

their fields of specialisation when they seek further training; the graduates of diversified schools failed to earn more than academic school graduates; diversified schools are more costly than the academic schools.

In the case of Sierra Leone several features of project design and implementation have had an important impact on the outcome of the projects implemented with the involvement of the World Bank. These are stated by Wright (1988) as:

1. There was too much concentration on civil works and equipment at the expense of programme development and personnel training. Little attention was given to the content of a diversified curriculum.

2. The selection of prestigious schools with good academic stream records for the project and in politically favoured regions means that there was less acceptance for the project.

3. The training of technical and commercial teachers was neglected.

4. When attention was given to the content of diversified programmes, greater confusion resulted. This was due to the difference between the training of teachers in technology (e.g. design technology) and the syllabus which was concentrated around the traditional crafts.

5. In some schools, supplied equipment stayed for years without being installed because of the lack of skilled people, while other schools with skilled teachers had not received the necessary equipment.

6. No arrangements had been made for the maintenance and repair of the supplied equipment.

7. Lack of consumable materials (e.g. wood, metal etc.), which was assumed to be regularly supplied, resulted in excessive teaching of theory for subjects which were intended and assumed to be practical.

8. Schools were left without any guidance about selecting what has to be taught as part of the diversified curriculum. This resulted in different subjects selected in different schools and with no help being given to develop the content of each subject area.

4.7 Structure And Organisation Of TVE In Iran

In Iran the term *"technical education"* is used interchangeably with industrial education to mean the preparation of students for the world of work at the secondary school level. This occurs in separate schools, each of which provides a curriculum specialised in one field of study. This might be: Technical and Vocational School (Honarestan Fani va Herfaee), Business Services School (Madrasae Khadamate Bazargani), and Agriculture Schools (Honarestan Keshavarzi) each of which are under the administration of the Ministry of Education and which places more emphasis on the practical subjects rather than the theoretical ones (Aziz-zadeh, 1994). In the reformed system which tries to balance general education and TVE, the Ministry of Education has presented a new vocational branch which called "Kar

Danesh". This course has replaced the Kad Project - a work experience scheme - that was introduced for pupils at high schools (ME, 1996).

The term *"vocational education"* is used to mean training education for a specific occupation with a narrow concern for theoretical aspects. Such technical and vocational training centres are under the control of the Ministry of Labour and Social Affairs (ME, 1996). In higher education, only the term *"technical education"* is used for those kinds of applied and engineering courses. Using of the term *"vocational education"* at the post-secondary level is not common in Iran. Shokohi (1995) argues that what exists in most technical and vocational schools in Iran cannot by any means be considered as technical education because these schools teach only essential principles in the field of 'industry', 'agriculture', and 'commerce' without qualifying and training for the world of work in a proper way.

Thus technical and vocational education in Iran is divided into three levels, as follows:

1. Non-formal Technical Vocational Training under the supervision of the Ministry of Labour and social affairs. This programme primarily trains individuals with minimal formal education (usually primary education) for vocational works such as manual jobs. These training programmes vary in duration and are usually short (a few months).

2. Formal Technical and Vocational Education is under the supervision of the Ministry of Education and also the Ministry of Culture and Higher

Education. This education can be substituted for formal secondary education. The program proposed by TVE schools and colleges offer two year programmes leading to a variety of major subjects needed in industry and commerce and agriculture.

3. Formal Higher Technical Education is also under the supervision of the Ministry of Culture and Higher Education. These programmes offer two years and four years of study after the completion of the secondary level education leading to bachelor degrees in a variety of technical fields (ME, 1996).

The TVE in Iran and its relation to formal general education are shown in Figure 2.1 in Chapter two.

UNESCO and ILO frameworks for curricula development have been incorporated in the recent educational reform. It seems that the five-year plan of TVE schools provides two major choices:

1. General Technical: participants receive 3 years of training in the fields, offered in schools, supervised by the Ministry of Education.

2. Specialised Technician: participants spend three years in TVE schools administered by the Ministry of Education and two years in Technical colleges specialising in fields such as power, roads and transport, industry, telecommunications, etc.

Perhaps the major weakness of contemporary training policy is that it neither specifies skills training nor provides an adequate general education. Thus,

under present conditions, the young lose out both ways; on the one hand, they do not acquire knowledge and understanding, however broadly defined, that allows then critical insight into the political or economic workings of society. Perhaps, not surprisingly, the expansion of vocational training has resulted in inferior general education, without the employment prospects of young people altering much one way or the other.

One effect of TVE, is that it can force young people to settle on vocational training and employment options too early on, in many cases prior to the fourth year at high school. Despite the publicity given to core curriculum and transferable skills training, early specialisation narrows the options open to young people later on in life. Consequently, without a broadly based general education it is most unlikely that students will be able to utilise forms of training that they have not been educated to absorb. The danger is that youth is fast becoming over trained and under educated, at a time when the general education base of most industrial nations broadening rather then narrowing around 'skill' training.

4.8 General Secondary Education In Iran

Secondary school (4 years) ages 14 - 18. Although, according to Ministry of Education Report, in 1991 the enrolment ratio in the upper secondary education is about 43% for boys and 32% for girls, but this level is a problematic department for the government. An increasing number of applicants for higher education, high unemployment amongst school-leavers, the lack of relationship between education and labour market, the lack of

sufficient skills and applied knowledge and a strong emphasis on academic-based courses, forced government to put reform of secondary education as the first priority in the Education Act of 1991.

In the reformed secondary education, the most important aim is preparing students for employment by increasing and improving facilities, materials and even the structure of the system. Therefore, in addition to reorganising the whole system, the developing of the those courses which require technical and vocational training, work experience and more partnership with economic system have been considered. The has created a new technical and vocational course which is called Kar Danesh. This course includes both applied and general education.

The length of the new secondary system has decreased from four years to three years and those students who finish this three years with a good mark can proceed to a one year pre-university course. The previous technical and vocational system, also has improved which students can study for five years. This period includes two years college studies and students will receive a higher education certificate. This may improve the social status of technical and vocational education and also will motivate parents to send their children to this kind of schooling. The new secondary system now is on trial and judging about its results needs more time.

Although there is not much evidence that technological change has dramatically raised skill requirements, or that improving the skills of the work force will by itself make the economy more productive, it is difficult to

dispute much of what the advocates of apprenticeship have to say about the shortcomings of Iranian schools and their failure to prepare high school graduates for work. High schools today do not do a very good job because they engage the majority of students in academic learning. Nor, except for those headed for higher education, is there much relationship between what happens in the classroom and the jobs students get when they enter the labour market. One result is that many students have little incentive to study hard or achieve in school. Instead, they drop out or else simply put in 'seat time' until they graduate.

For these students, a job-based education programme like an apprenticeship does indeed seem to offer a much-needed alternative to the academic orientation of the high school curriculum. There is some evidence, for example, that students are bored with academic and other kinds of general intellectual skills which they need most both at work and in social life.

Advocates argue that apprenticeship will create a learning environment that provides for the development of both specific and general skills. But rather than broaden the character of the curriculum to meet the needs of a diverse population, the introduction of work-related programmes has functioned over the years to fragment the curriculum and deepen the division between students in academic-based and non-academic based courses. In fact, many of those who have studied the history of vocational education contend that it has done little to unify practical and academic education or eliminate the gap between those headed for work and those headed for higher education. Much

more often, they say, vocational education has fostered a differentiated system of schooling, with low-income and minority boys channelled into industrial education programmes, low-income and minority girls channelled into traditional female courses and occupations, and white middle-and upper-class students directed toward academic-oriented programmes.

Indeed, some contend that this will actually increase the efficiency of Iranian education. They argue that making explicit provision for the TVE will promote more opportunity than the existing system, which tends to give access to the same education to every student but in reality provides many students with little useful training at all.

In the end, if there is a positive approach to changing the relationship between education and work, it is not to subordinate education even further to vocational concerns, as an apprenticeship system ultimately proposes to do. A more democratic alternative for a changing economy is to provide all students with the kinds of skills they need to develop fully and to manage technological change. This means offering them an education that will equip them not only with specific vocational skills but, in John Dewey's words (1916), with the "initiative, ingenuity, and executive capacity" they need to be "masters of their own industrial fate." Such an education by itself is not sufficient, however. It is also necessary to develop policies for schooling and the economy that intervene more directly in labour markets rather than focus exclusively on education and training.

4.9 Summary

This chapter has focused on the some major issues of technical and vocational education in both developed and developing countries and its structure in order to highlight relevant problems and experiences with which Iranian policy makers get insight to reform and improve the country's secondary education system.

While, in Iran it has been accepted that a trained labour force is necessary for economic development, and that technical and vocational education programmes have a significant part to play in this endeavour, the discrepancy between labour force supply and demand has always been a constraint. The continuing parodox is that in the country a critical shortage of skilled labour exists beside an equally critical surplus of job seekers; the people exist, but the skills do not.

The emphasis for recent educational reform in secondary school has focused increasingly on schools and vocationalism, and prominent is the requirement that they could perform a diverse and multiple function: prepare for traditional and modern sector employment, further technical training or further academic education. Despite continuing doubts about the efficiency of the relatively recent initiatives outlined, they contain elements essential to the development of an appropriate indigenous system of technical education, which may be modified, adapted and transferred according to need on a local basis. Also, the widespread and compulsory inclusion of technical subjects in the school curriculum, while being frequently criticised, is a growing reality

that will not only ultimately be of value in vocational preparation, but the ramifications may be felt throughout the curriculum and structure of secondary education. The criticism of such local initiatives, mostly based upon the unassailable logic of economic cost-benefit ratio, would be regarded as far more positive and acceptable if they contained greater indications of viable alternatives, rather than merely suggestions for maintenance of the curricular and structural status quo.

However, to correctly identify problems in the structure of secondary education the following suggestions are likely worthy of attention:

1. In designing a vocationally based curriculum for secondary schools, it seems that consultation with experienced industrialists, employers, trade and professional groups and private practitioners is required, with those who would be in a good position to direct the courses towards the receptive needs of industry;

2. In order for it to respond more effectively to the needs of the economy, the content of the school curriculum needs to be restructured to reflect the co-operative role between schools and industry in the learning process. Reviewing the experience of the leading age countries in this case is essential;

3. As the reformed secondary system emphasises functional knowledge and skills, there may be a need to restructure teacher education programmes at all levels to include industrial study so that not only technical teachers but

also other teachers, may develop insights into what obtains in the world of work;

4. Exchange visits between institutional heads and personnel from industry could be considered as this an important means of maintaining effective communication between educational institutions and industry;

5. As occupations and job requirement vary from location to location in the country, the national curriculum on vocational subjects could be as flexible as is reasonably possible.

CHAPTER FIVE

RESEARCH METHODOLOGY

5.1 Introduction

This chapter aims to describe the methodology used for the present study. This chapter has been structured around the phases which followed in designing the research, collecting data, and analysing and interpreting the results.

As the researcher highlighted in previous chapters, there is a belief that students in Iran are not prepared according to the requirements of the world of work. The failure of the schooling system in preparing students for employment has resulted in a shortage of skilled and semi-skilled people in the labour force which has had a negative impact on the realisation of many objectives of developmental planning. One of the main objectives of the 1991 educational reforms was to reduce the barriers between theoretical and practical components of different subjects, and hence lead to more students studying technical and vocational courses. This research has been an attempt to provide basic information about the weaknesses of secondary education in order to prepare students for the world of work; how it can be re-orientated, and how the relationship between education and the economy can be improved. Moreover, it has been an attempt to find out how the secondary school curriculum could be changed in a way that could encourage more

students to study vocationally-oriented courses and hence to enhance the development of technical and vocational education. The recommendations drawn from this study are expected to give the policy makers insights into how to restructure the educational system in which there is a balance between academically-oriented and TVE courses and to make the necessary changes in the secondary school system to meet the economic development needs of both skilled and semi-skilled workforce. The major planning stages of this study are shown in Figure 5.1.

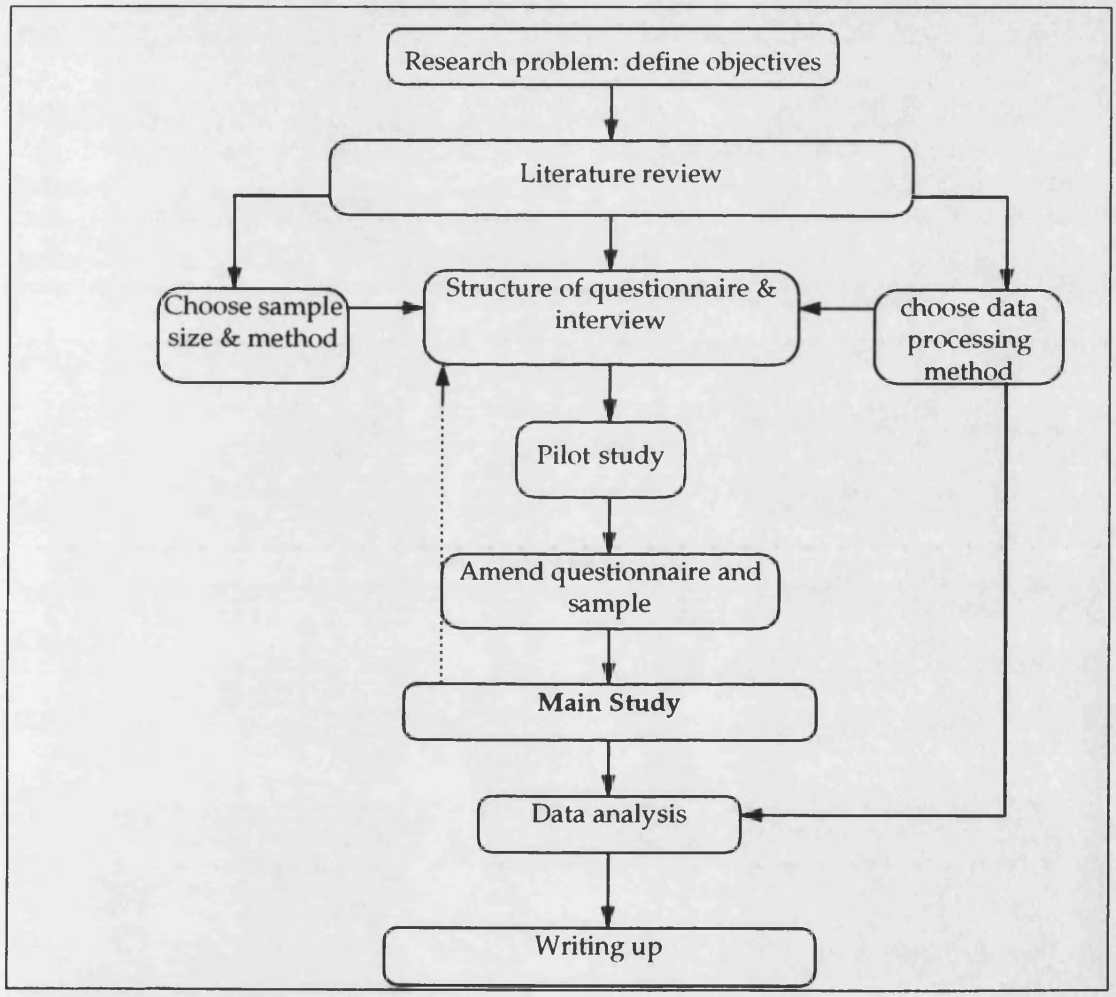


Figure 5.1: *Main stages in planning the research.*

5.2 Research methods

In the behavioural sciences, including education, researchers rarely provide final answers for the questions that concern practitioners and policy makers. However, educational research has generated much useful information that can help educators, administrators, and researchers decide on courses of action relative to nearly any educational problem. 'Research in education is a disciplined attempt to address questions or solve problems through the collection and analysis of primary data for the purpose of description, explanation, generalisation, and prediction' (Anderson, 1990, p.4). In this respect, there are many ways and techniques in which researchers approach educational problems. According to Fraenkel (1990) these investigation techniques have been grouped into two main groups as follows:

- Qualitative (subjective or interpretative) research methods: interviews and observation are the most common approaches in this group.
- Quantitative (scientific or normative) research methods: questionnaires are the most common approaches in this group.

One of the highly recommended ways which leads to valid conclusion is a combination of quantitative and qualitative methods in a study. As Cohen and Manion (1994) point out consistent findings from different methods of data collection strengthen the result by decreasing the possibility of researcher biases.

It is very important to state that had more resources such as funds, time and trained personnel been at the disposal of the researcher, this would have

offered greater opportunities to use various research methods which would have served to triangulate the collected data for this research. As this study deals mainly with secondary school teachers' and university students' views of the current secondary education regarding its relation with the world of work, it was felt that if interviews could be carried out along with the questionnaires, more valid results could be expected to be obtained.

5.3 Research tools

The present study is based on two main investigative instruments, i.e. questionnaires and interviews. In addition to above methods, informal discussion was also used. Each research tool used in this study, its merits, strengths and limitations will be dealt with in greater detail in this chapter.

5.3.1 Questionnaire

The questionnaire was used to collect data from the main samples of secondary school teachers and university students because of its advantages in a survey study. The questionnaire has become one of the most used, useful but also abused means of collecting information. If well constructed, a questionnaire permits the collection of reliable and valid data relatively simply, cheaply and in a short space and time (Anderson, 1990). It has the advantages that standard instructions can be given to all respondents and the personal appearance, mood or conduct of the investigator will not have any effect on the results. Best (1981), and Walker (1985) indicated that the person administering the questionnaire has an opportunity to establish rapport, to

explain the purpose of the study, and to explain the meaning of items that may not be clear. Moreover, the availability of a number of respondents in one place makes possible an economy of time and expenses, and provides a high proportion of useable responses. In sum, there are four main advantages for researchers when they use a questionnaire in order to collect the required data. These as Munn and Drever (1990) highlighted are as follows:

- an efficient use of time;
- anonymity (for the respondent);
- the possibility of high return rate; and
- standardised question (p. 2).

The researcher took into account the limitations of the questionnaire method, such as the difficulty of constructing a series of questions that have a clear meaning to every respondent, the risk of misinterpretation of some questions by respondents, and the possibility of a low rate of return. Many of the limitations were minimised. For instance, the difficulty of the construction of meaningful questions was reduced by the means of a trial study (Oppenheim 1966; Engelhart, 1972) and misinterpretation of some questions by the availability of the researcher (Borg and Gall, 1989; Cohen and Manion, 1994).

There are different forms of questions. According to Anderson (1990) there are six common question formats which can be used for collecting data. Basically these formats may be in a closed form in which respondents select an answer from different options such as 'Likert-type scales', or an open form, in which respondents make any responses they wish in their own words such as 'comment on'. Which form needs to be used is determined by

the objectives of the particular question. In addition, to reduce time and the cost of the study as much as possible, the researcher therefore used the closed form in order to carry out efficiently the quantification and analysis of the data (Borg 1981).

5.3.2 Interviews

Interviews were also used in this study to collect data from senior policy makers in the Ministry of Education and from a group of employers. Borg and Gall (1989) consider the interview superior to other data collecting tools because it usually permits an immediate feedback, more data, and much greater depth and clarity. Best (1981) also claims that people are more willing to talk, the interviewer can explain the purposes of the investigation and any misinterpreted questions can be explained. However, although this technique has a number of important advantages over other research tools in certain situations, the interview does have definite limitations as a research tool. For example, although flexibility, adaptability, and human interaction are unique strengths the interview also allows subjectivity and possible bias that in some research situations are its greatest weakness. But there are some disadvantages for this technique such as the time consuming nature, the possibility of biases by both the respondents and the interviewer, and moreover the possibility some sources of error by both respondents and the interviewer in interviews (Powney and Watts, 1987; Cohen and Manion, 1994).

The researcher tried to reduce the above mentioned limitations as much as possible. For example, interviews were used for relatively small numbers of respondents to minimise the time required to carry out the study. The expected biases and errors were minimised by carefully constructing and administering of interview schedules.

5.3.3 The construction of the questionnaire

Two similar sets of questionnaires were constructed in order to address the main research questions mentioned in chapter one. One set was for use with secondary school teachers and the second was for use with university students (see Appendices 5.1 & 5.2). Questions and items of questionnaire were incorporated from other researches cited in the literature, while others were developed by the researcher drawing on his own experience of secondary education in Iran.

5.3.4 Content of the teacher questionnaire

This questionnaire consists of two sections which were as follows:

A. Personal information:

In order to find out the following characteristics of the sample of teachers.

- Gender
- Age
- Qualification
- Main teaching subject
- Teaching experience
- Current position in school.

B. Teachers' views of the current secondary education

This section which included the main research questions addressed four areas which looked at:

1. Education's focus on required skills for employment

Here we offered a list of skills, knowledge and attitudes in six categories which have been highlighted as required skills for youth employment. Teachers and students then, were asked to indicate to what extent the academic courses in high school place emphasis on these qualities and based on that to select their responses to a number of statements from five options. The options were in the following terms: *"strong emphasis", "emphasis", "uncertain", "little emphasis", "no emphasis".*

2. Education-industry relations

This part was used to find out the nature of the relationship between the school system and industry, how the educational system can be more effective in this respect, and to what extent industrialists should participate in the educational process. Teachers then were asked to select their responses to a number of statements from options such as "completely", "to a large extent", "uncertain", "to a little extent", "not at all", for the following questions:

- Do you think that there should be a connection between the needs of labour market and the high school curriculum?

- Do you think that curriculum policy makers have taken into account the labour market needs of the economy in designing the present high school curriculum?
- Do you think that industrialists should be involved in designing the high school curriculum?
- Do you think that the high school curriculum should be sensitive to local employment circumstances?

3. Curriculum characteristics

The items in this part were used to investigate teachers' views about the emphasis, quality and direction of the current high school curriculum and how it can be described. Therefore teachers were asked to select their responses to a number of statements from three or five options for the following questions:

- What do you think is the emphasis of the current high school curriculum?
- Which high school curriculum, do you think the majority of the parents prefer?
- Which high school curriculum, do you think the majority of the school governors prefer?
- Which high school curriculum, do you think the majority of the teachers prefer?
- Which high school curriculum, do you think the majority of the students prefer?
- What sort of curriculum, do you think would maximise the employment chances of students?
- Do you think that there is any connection between the teaching methods used in the curriculum and the employment chances of pupils?
- How important do you think career education should be in the high school?
- To what extent do you think, schools use the career education and guidance services to help their students make career chances?
- Which of the following statements accurately describes the current high school curriculum?
- The high school curriculum does not take into account the future employment needs of students.

- The high school's methods of teaching are not appropriate for the future employment needs of students.
- The high school curriculum is not adequately resourced.
- The elements of the high school curriculum are not sufficiently integrated.
- The world of work is not emphasised sufficiently in the high school curriculum.
- The high school curriculum is too concerned with the development of theoretical rather than practical knowledge.
- The practical elements of the high school curriculum are not taught in conjunction with local industry.

4. The causes of youth unemployment

Eleven items were included in this part in order to find out the problems and factors which both relate to the nature of secondary education and affect the employment chances of high school graduates. In relation to each item teachers were asked to select their responses to number of statements from a five options scale. The main question was: *"Which of the following factors do you think affect the employment chances of high school graduates?"* which addresses the following items:

a: The gap between school courses and the needs of work.
b: Lack of appropriate occupational guidance and counselling.
c: Lack of practical and applied knowledge in the curriculum.
d: Lack of training and internship for pupils.
e: Lack of emphasis on the significance of work in socio-economic development during their courses.
f: Lack of opportunity for seeing and understanding the variety of occupations in society.
g: The failure of school management and teachers to use local opportunities for connecting education and work.
h: Ignoring employer's opinions and suggestions about the curriculum.

i: Insufficient investment in the education-industry relationship to provide required facilities in this field.

j: Belief that academic courses are more useful than vocational courses.

k: Failure to take into account local needs and workplace requirements in the curriculum.

5. Youth preparation for employment

This part was included to assess teachers' views in order to highlight a series of possible approaches which might improve the quality of relations between school and industry. This question addressed seventeen items so that teachers were asked to select their responses to a number of statements from the following options scale of "Strongly agree", "Agree", "Uncertain", "Disagree", and "Strongly disagree". The main question was *'Which of the following approaches are appropriate for the preparation of secondary school pupils so they can meet more effectively the demands of their future work life?'* which addresses the following items:

1. To emphasise the essential values, knowledge and skills relating to work
2. To allocate enough time and resources for introducing with work and its different effects.
3. To emphasise training and internship in all courses.
4. To emphasise flexible and applied skills and knowledge.
5. To establish annual exhibitions in various industrial fields where students can learn more about the industry and the jobs it offers.
6. To visit industry and trade centres regularly.
7. To decentralise curriculum development.
8. To participate with employers in developing the high school curriculum.
9. To emphasise team work in school.
10. To provide suitable opportunities for teachers to introduce workplace situations.
11. To facilitate relations between school and other institutions by reforming management systems.

12. To emphasise quality management for developing approaches in these fields.
13. To evaluate the curriculum in order to continuously improve goals and standards.
14. To use educational technology: TV, video, in teaching practical subjects.
15. To use occupational guidance and consulting services in school.
16. To emphasise careers education.
17. To establish the office of partnership with industry in schools.

5.3.5 Content of students' questionnaire

Similarly to the teachers' questionnaire, this questionnaire consists of two sections which looked at:

A. Personal information:

This section was included to find out the following characteristics of respondents:

- Gender
- Age
- Marital status
- Field of study
- Type secondary school: general high school, technical and vocational school, teacher training centre
- Employment experience

B. Students' view of the current secondary education:

Students' views of the current secondary education were sought in the same form of a scale consisting of several statements and three or five levels of agreement from which respondents select those which best represent their

view. For time saving and because this section is identical to the teachers' questionnaire, it is not repeated again here.

5.3.6 Translation of the questionnaires

The items of the questionnaires were drafted, piloted and then formally written in English. They were then translated into the Persian language in order to be used by respondents in their own native language. This was done to achieve clarity of meaning, and to remove any language barriers. The translated items were checked by several Iranian post-graduate students studying in the Modern Languages Schools in different universities in the UK. Their recommendations were considered in the revision of the questions and the accompanied general text (see Appendices 5.1 and 5.2).

5.3.7 Construction of the interview schedules

Two semi-structured interview schedules were developed for educational policy makers and employers (see Appendices 5.3 and 5.4). Each interview schedule consisted of a statement of the purpose of the interview, an opening statement and then the questions in sequence.

The interview schedules were translated in the same way as the questionnaires were translated. In the policy makers' interview main issues examined were:

Respondents' opinions about:

- The importance of education and the economy links.

- The necessity of reforming secondary education in order to emphasise more technically and vocationally-oriented education
- Education for work models.
- The ways that education analyses and addresses the labour market requirements.
- The reliability of the recent educational reform regarding preparing young people for the world of work.
- Problems facing the reform of education to be more technically and vocationally oriented.
- How to overcome the problems.

In the employers' interview the main issues examined were:

- The existing relationship between school and workplace.
- Essential skills and abilities for employment of the young people.
- Employer options about the problems of this relationship.
- The performance of school leavers at workplace.
- The responsibilities of employers in order to support educational system regarding the preparation of the future employees.

5.4 The pilot work

A pilot study will, first of all, help the researcher to decide on the feasibility of the study whether or not it is worthwhile to continue. It permits a preliminary testing of the hypothesis, which may give some indication of its tenability or whether further refinement is needed. It also demonstrates the adequacy of the research procedures. Therefore, in this research a pilot study was carried out in order to gain insights about each item of the questionnaire so that any difficulties in understanding the meaning of each item could be checked and corrected (see 5.5.4 for fuller discussion of validity).

5.4.1 Samples for the pilot study

Two samples were selected for the pilot work:

A sample of eight secondary school teachers was selected from secondary school teachers in a way which represented different subjects, and male and female teachers. Table 5.1 represents the number of secondary school teachers and their teaching subjects.

Also eight Iranian students who were studying at the University of Bath were selected as a student sample as they were representatives of different field of study. (see Table 5.2).

Teachers	*Male*	*Female*	*Total*
Mathematics	1	1	2
Social Sciences	1	1	2
Chemistry		1	1
Physics	1	1	2
Persian		1	1
Total	3	5	8

Table 5.1: *Respondents (secondary school teachers).*

Students (field of study)	*Number of respondents*
Electrical Engineering	3
Electronic Engineering	1
Material Science	1
Mathematics	1
Mechanical Engineering	1
Systems Planning	1
Total	8

Table 5.2: *Respondents (students).*

5.4.2 Mailing the questionnaire for the pilot study

The English and Persian versions of the questionnaires were given to Iranian students studying at University of Bath, and sent to the teacher's sample. As I pointed before, two points were key in the pilot study: first to check for the

correctness of the translation and second, to make sure that questions were reliable and relevant to the research subject.

5.4.3 Results and discussions

The following results were obtained from the pilot study:

5.4.3.5 Contact with the Ministry of Education

A letter was sent to the Ministry of Education in Iran for permission to carry out the research (see Appendix 5.5 and 5.6). That permission was granted, together with the assurance of any necessary assistance in the completion of the survey. The researcher was officially introduced to the regional departments and to the selected schools and also to selected universities for co-operation (see Appendices 5.7 , 5.8, and 5.9).

5.4.3.6 Contact with the head teachers of secondary schools

All the selected secondary schools authorities for the main study were contacted and all of them agreed to give all possible assistance for the distribution and collection of the questionnaires to both teachers and students. And also all selected university authorities were contacted. All of them agreed to give any required assistance in this respect.

5.4.3.7 Reconstruction of the questionnaires

Following on the comments and suggestions of the respondents to the pilot study and the suggestion of the researcher's supervisor, some items were

excluded and some were scrutinised which resulted to a revised and restructured set of questionnaire in their final forms in order to use in the main study. The final form of the questionnaires are shown in Appendices 5.1 and 5.2.

5.5 Setting up the main study

As a result of the pilot study and the suggestions from School of Education in the University of Bath Research Committee, the main study was carried out for collection of data from different participants. The following section describes the processes involved in the main study.

5.5.1 Samples for the main study

The sample for this survey was similar to the pilot in that it consisted of secondary school teachers and university students. Additionally, officials from the Ministry of Education (Educational policy makers) and a group from industrialists were also in the sample. Selecting the groups was based on the following rationale. So as Iran is a large country and practically it is impossible that all area are addressed in the research, this survey has been carried out only in two areas. Thus the samples have been selected from: a capital city which is surrounded by all kind of industry, business and economic activities and a remote and deprived area in which modern industry has no major role in the employment structure. This made it possible to find out and to compare different views about the structure of the relationship between secondary education and the economy in the two major

sectors of the economy. Choice of these two areas made it practical for the researcher in terms of collecting data. Collecting data in Kurdistan as a place where the researcher lives was thus relatively easy and also in Tehran which is the seat of all ministerial offices, major organisations, and universities.

Teachers and students: secondary school teachers and students were essential to this study because of the importance of their views about the strengths and weaknesses of secondary education regarding the preparation of the young people for the world of work. And also the roles of teachers in the success of any change, and the resistance the change would face from them if they did not accept it.

Educators in many countries have objected to TVE and vocationally-oriented education as being an effective factor in economic development. In this study, the researcher wanted to see what were the reactions of Iranian teachers in academic schools regarding this claim that providing an education relevant to the requirements of the economy may maximise youth employment opportunities. It would seem that this question could demonstrate a bias in favour of an academic curriculum, but data showed in fact that despite their own academic orientation, they were supportive of a more pratical and applied education for their students. They also stated that the links between education and our economy is quite essential and can be achieved by providing an integrated education. This demonstrates the broad acceptance in Iran of a more vocationally oriented education.

Students was considered important because they have experienced the high school curriculum and perhaps have understood some of the problematic aspects of education concerning youth employment.

Educational policy-makers: in those countries like Iran which have a central institute for developing the school curriculum, policy makers have a great role in processing curriculum aims, methods, and materials. Since they are still involved in the completion of recent educational reforms, they were considered as a relevant source in order to clarify the reasons behind that reform which is directly related to the preparation of young people for employment.

Employers: in many cases educational studies have shown that employers can help educators improve education towards their needed skills. Green (1995) points out that employers, unions and educationalists must all be intimately involved at all levels of the education for work to be successful. Preparation of young people for work without employer input is bound to lose relevance to the world of work which defeats one of its objects. There are several business and industrial sectors in the country both traditionally and contemporary. In order to cover major business sectors, a reasonable number of employers in these wide economic fields were required. But based on the limited time available for collection data, 12 employers were finally selected and interviewed. The researcher picked this group intentionally from the modern business field for two reasons: firstly, the direction of Iranian economy is to emphasise industrialisation and more development in this

sector (see Chapter Two), and secondly, sufficient materials and studies in this field made it possible to compare the research results with other countries' experiences (see Chapter Three).

5.5.2 The size of the samples

- **Teachers:**

A sample of 200 teachers were selected from 12 secondary schools in Tehran and Sanandaj. The actual numbers of respondents are as shown in Table 5.3. Two reasons were considered in the setting the sample size in this level of 200 teachers. First providing a basis in order to use both parametric and non-parametric analyses which this size enables the researcher to employ the required statistical techniques, and second to reduce the amount of time consumed and the research's costs. This size is sufficient to examine the relationships within subgroups (Borg, 1987; Cohen and Manion, 1994).

Teachers	*Male*	*Female*	*Total*
Numbers	65 (59%)	45 (41%)	110 (100%)

Table 5.3: *Respondents (secondary school teachers).*

- **Students:**

As with the teachers, a sample of 200 students were selected from four universities in the same cities. One university specialised in engineering, one in humanities, one was mixed, and the last was a teacher training university. Table 5.4 shows the actual respondents by gender.

Students	*Male*	*Female*	*Total*
Numbers	69 (60%)	46 (40%)	115 (100%)

Table 5.4: *Respondents (university students)*

- **Educational policy makers**

The researcher selected a sample of twelve senior policy makers among those who were members of the executive council for recent educational reform in the Ministry of Education so as to gain the official ideas of the Ministry of Education, as well as their personal views.

- **Employers:**

Also twelve employers from different sectors were selected by the researcher in order to find out their expectations of the educational system and their views about the performance of secondary school graduates in the labour markets. One reason for selecting employers representative from different sectors can be related to the nature and level of development in these sectors which may require different workforce.

5.5.3 Sampling techniques

In order to select respondents randomly from each population participating in this study, different sampling techniques were employed.

1. Secondary school teachers:

A cluster sampling technique was employed to select a group of teachers in the successful secondary schools in order to maximise validity (see 5.5.4 validity). As stated by Borg and Gall (1989) and Cohen and Manion (1994) this technique is used when it is more feasible or convenient to select groups of individuals than it is to select individuals from a defined population or

when it is difficult to list all the members of a large population to select the sample, or the sample is very scattered.

The following steps were used for the selection of the sample:

The list of twelve high ranked secondary schools was obtained from the Ministry of Education and used to find the number of male and female schools.

Male and female schools were selected by assigning a number to each school in the list; once more the required number of male and female schools were drawn randomly from a small box containing the numbers of all the schools.

In each selected male and female school, the main teaching subject were identified.

2. Students

The following random systematic sampling technique was used to select university students:

- Four universities with different ranges of activities and fields of study were selected an engineering university, a comprehensive university, a humanities university, and a teacher training university.
- The list of all students in different department was obtained from the Admission Office in the selected universities.
- Departments selected in each university were used as a unit for selecting the respondents in order to make the distribution and collection of questionnaires easier and less time consuming.

- Random sampling was used to select student in each university by gender and field of study.

5.5.4 Research Validity

A basic characteristic which is absolutely crucial for any research instrument is research validity. It is a useful oversimplification to think of validity as truthfulness: Does the test measure what it purports to measure? The presence or absence of this characteristic along with reliability will influence the accuracy of the conclusions drawn from the research (Turney and Robb, 1971; Le Compte, Millory and Preissle, 1992).

The following types of validity which related to this study were considered and checked:

To increase the content validity, the researcher followed the procedures below as confirmed by Gronlund (1976), and Mehrens and Lehmann (1984) i.e.:

- The objectives of the study were specified.
- Since the content is difficult to define, different issues to be considered by the researcher were stated depending on the review of the related literature and his own experience.
- A pool of items were constructed to cover each issue.
- The relevance of each item to the issue to be examined was checked by consulting different experienced individuals and also by the pilot study.

Internal validity was enhanced by eliminating or minimising the effect of the following factors:

For control of loss of subjects especially amongst the sample of students the questionnaires were distributed and then collected as soon as students responded. So that the rate of return was relatively high (see 5.6.3 in this chapter). In this respect university departments were used as a unit for the distribution and collection of the test.

The instrument was designed in a way so that the respondents selected the appropriate answer from different options. Thus the scoring procedure was not affected by the scorer as it didn't permit different interpretations of the result. Additionally, the researcher distributed and collected the questionnaires himself.

External validity was checked by randomly selecting the respondents to make the sample representative of the population. (see the sampling technique). Moreover, the size of the sample was as high as the time and expenditure permitted. The following types of factors which affect validity were considered and checked:

A. Factors within the instrument

1. The directions for answering were written clearly so that respondents understood what they had to do.
2. Simple words were used so that the respondents understood every item. Some concepts which may have different meanings were defined.

3. The questionnaires were translated into Persian so that the same original meaning was maintained. Improper translation may have an effect on validity by changing the meaning of the statement so it measured something different than what was intended originally.

The above factors were checked by the following:

- Colleagues' views in the School of Education were used in order to analyse the questionnaire's components.
- The pilot study was used to find out any ambiguous or unclear items or any inappropriate translations. Suggestions and comments from respondents were carefully checked and considered.

B. Other factors

1. Administration procedure.

The researcher attended all secondary schools and departments at universities and distributed the questionnaire by himself and explained the directions for answering and responded to any enquires.

2. Heterogeneity of the group

The samples used in this research were selected randomly by a cluster and a systematic sampling technique in which respondents were from different clusters.

3. Interpretation of the results.

An appropriate analysis of data tools was used according to the assumptions required to be met for applying each of these tools.

Additionally, validity was checked by a methodological triangulation. 'Triangulation is commonly used to refer to the process of obtaining information on a subject from three or more independent sources' (McNiff, 1988, p. 84).

Informal discussions after the collection of the questionnaires, were held with teachers and students, about the issues raised in the questionnaire. Some insights were drawn about their views of educational system. These insights were checked with the result of the analysis of the samples' responses to different issues. Both methods revealed similar results.

5.6 Reliability

The basic concept of reliability concerns the consistency of data gathering and data interpretation. There are different ways of viewing reliability; in this research the following procedure was used by the researcher to find the coefficient of reliability:

Item analysis was carried out to find the internal consistency of the scale of respondents' view of secondary education by correlating the score in each item to the total scores.

The internal consistency (Cronbach's Alpha) was found for the teachers' and students' scales by correlating the scores of respondents in each item to the total scores. As confirmed by Mehrens and Lehman (1978), Fraenkel and Normann (1990) and SPSS (1996), The Alpha model was used because the data are in dichotomous form. Following Cronbach (1970), any item having a

coefficient of correlation below .20 was discarded. However, it is not recommended that many items should be discarded as, although this will increase the internal consistency of the items, it will also decrease the content validity of the instrument. He states that:

> "dropping items with low correlation may reduce validity. Dropping a particular item probably will not spoil the content validity of the test. The danger is that many of the poorly constructed items will fall in the same content area. When they are dropped the test loses representatives" (p.147).

A split-half method was used to find the coefficient of reliability (internal consistency) for the scale of teachers' and students' views of educational system by scoring it after dividing it into two equal halves. Then the coefficient of correlation was calculated between these two halves. Results were found for split-half and Alpha as shown below:

Teacher's Student's scale	Result	No. of Item
Alpha	0.89	55
Split-half part 1	0.54	28
Split-halfpart 2	0.93	27

5.7 Administration of the questionnaires and interviews

The following steps were followed in order to collect data:

5.7.1 Preparation

The head teacher of each selected school was asked to indicate a suitable time for the distribution of the questionnaires to teachers. And also they were asked to gather teachers in the teachers' room in order to give the necessary explanation about the importance and the aims of research and to their questions as well.

5.7.2 Distribution And Collection Of The Questionnaires

In the secondary schools the questionnaires were distributed with the assistance of head teachers in each school. Teachers were given two and in some cases three weeks time to return the questionnaires to the head teachers. In the higher education departments, questionnaires were put in the students' mail boxes and they were asked to return the questionnaires to the department libraries. This group also had two weeks in order to return the questionnaires. In many cases the collection of papers from respondents was followed by an informal discussion.

5.7.3 Rate of return

For teachers, 110 out of 200 responses were received (return rate 55%). And for students 115 out of 200 responses were received (return rate 57%). The completion rates may have been adversely affected by the time chosen for the distribution of the questionnaires which was nearly the end of the academic year. While this return is less than intended it did not vitiate the analysis.

5.7.4 Administration of the interviews

One of the most difficult aspects of collecting data in this research was arranging time for interviews with senior policy makers. It was Parliamentary Election time and most of these people were involved in the election challenges and they cancelled researcher's appointments many times. Although all of the interviews were carried out by the researcher, the time

available was not sufficient for the researcher to complete all proposed interviews.

5.8 Data Analysis

All the completed questionnaires were scored in two forms from 5 to 1 or 3 to 1 with different statements according to the structure of any group questions.

5.8.1 Statistical analysis

After coding data and entering them into the computer, different statistical techniques were used to analyse the responses of teachers and students. Mainly, non-parametric techniques were used in the form of a Chi-square approach to test for differences. Guilford and Fruchter (1978) stated that:

> "Chi-square is used with data in the form of frequencies, or data that can be readily transformed into frequencies. This includes proportions and probabilities. One important feature of chi-square is its additive property, which makes possible the combination of several statistics or other values in the same test" (p. 193).

Chi-square thus, was considered to be the most preferable statistical procedure to be used for the analysis of data because the data were in the form of frequencies and the following assumptions were met:

1. Samples were independently selected therefore gave independent answers to questions.

2. Most of the expected values were large enough. Erickson and Nosanchuk (1977) specifies that for 2X2 tables, the expected values in each cell should

be 10 or more. When the expected frequencies were fewer than 5 in a table longer than 2X2, one or more of the following were done:

- Some of the categories with small expected frequencies were combined in some sensible, non arbitrary way to have a larger expected values. This is confirmed by Ferguson (1971), Erickson and Nosanchuk (1977), Guilford and Fruchter (1978), and Hatch and Farhady (1982).

- A modification known as *'Yates's correction for continuity'* was used, where the degree of freedom was less than 3. This is shown by Furneaux, Bynner and Murphy (1973), Guilford and Fruchter (1978), and Gupta(1991).

5.9 A reflexive critique on the limitations of the research

This research was aimed at evaluating current Iranian secondary education and its relation to the economy. In this analysis I will examine some of the limitations in the methodology.

1. The sample groups could have been extended to include those in employment and youth unemployed. This would have permitted the inclusion of an analysis of the perceptions of these groups about the relationships between Iranian secondary education and the economy.

2. The employers' sample could have been extended to be more representative of the different organisations which constitute the Iranian economy. The questions could have discriminated between different types of employment and the relevant skills needed. This would have permitted a content analysis of the curriculum in Iranian secondary schools in relation to the skills needed in the economy.

3. Establishing a trustful environment in dealing with employers during interviews in which employers can express their opinions freely about the issue in a larger social, economic, and political context was difficult. Greater attention should have been paid to the issue of confidentiality in exploring some of these sensitive issues.

As an educational researcher, with a set of qualifications which directly relate to *'education'* and also a few years involvement at a teacher training university, I think that this academic background and experience have formed my attitudes, and assumptions about the nature of education - economy relations. During those years (1983-1991) when I was studying education and its implications for the economy particularly in a developing country such as Iran, I have been influenced by the view that educated people are more effective drivers of economic growth than those with poor levels of educational attainment.

Although, there are big disagreements amongst some of educators and economists about the role of education in economic development, there are still a remarkable number of studies in this field which support the researcher's idea. This idea has been positively emphasised by some international organisations like The World Bank. The World Bank has clearly stated that "higher living standards, better health, increased productivity, improved well-being for women, and good government all depend on widespread education. In an era of rapid technological change and international economic integration, an educated, adaptable workforce

enables countries to prosper. The reverse is also true: countries without such a labour force are liable to be left behind and shut out of this prosperity" (The World Bank, 1995, p.178).

However, with this educational background and experience, the researcher questioned the existence of an effective relationship between schooling and economic systems in Iran, in particular its failure to prepare young people with relevant skills and abilities for the world of work. While the researcher has theorised this relationship in a supportive way, he has reviewed those critics and schools of thought which criticise this issue.

The researcher attempted to accommodate the setting, mode, style and pace of interview to the preferences of the interviewees - to create, bearing in mind the inherent peculiarities of the interview, as naturalistic an encounter as is possible. He also tried to raise the questions in a neutral way, but as Ball (1994) notes political interviews are themselves highly political. In some cases, the interviewees were following a range of certain aims such as presenting themselves in a good light, not being indiscreet, conveying a particular interpretation of events, getting arguments and points of view across, and deriding or displacing other interpretations and points of views. As Scheurich (1992) points out interviewees do not simply go along with the researcher's programme (quoted in Ball 1994, p. 96). In addition to this, interviews with politicians (educational policy makers) highlighted the struggle both to control the events and to control meanings. For instance, some of them were not going to make an

appointment for interview with the researcher unless they have the interview's questions in advance.

Thus as part of a move to a more open interview format we need to give more attention to the problems and processes of interpretation (the relation between data - explanation - theory) as I have attempted to do, here, albeit with some difficulty. Building theory, by its very nature, implies interpreting data, for the data must be conceptualised and the concepts related to form a theoretical rendition of reality. Additionally, we need to reconstruct the major policy orientation by making sense of all the ad hoc policy related actions which yet transacted in the education - economy realm.

4. Because of the lack of research in Iran, most of the cases, models, and theoretical issues raised in the literature survey were based on research in other industrial societies. A fuller comparative study could reveal the nature of the social, cultural, political, and economic differences between Iran and other industrial societies and the extent to which it may be possible to draw on such comparative data in understanding the relationships between the educational and economic systems in Iran.

5. More attention should have been given to the construct validity of the questionnaire. In conducting the study it became clear to the researcher that in a few case those teachers who were teaching in both current and the reformed secondary schools were confused by the questions.

Now I want to develop a self-reflexive account of the kind referred to by Halsey et. al. (1997) drawing on the work of Giddens:

> Social reflexivity is both condition and outcome of post-traditional society. Decisions have to be taken on the basis of a more or less continuous reflection on the condition's of one's action. 'Reflexivity' here refers to the use of information about the conditions of activity as a means of regularly reordering and redefining what that activity is. It concerns a universe of action where social observers are themselves socially observed; and it is today truly global in scope (p. 38).

I wanted to stress my self-reflexivity as an educational researcher. I accept as Halsey et. Al. Point out that no sophisticated theory of education can ignore its contribution to economic development (Halsey et. Al. P. 156). In my thesis I have demonstrated my concern to integrate the economic development of Iran into my theoretical analyses.

Yet, as I think about developing a culture of educational research in Iran I am struck by the lack of evidence in my thesis which is directly related to the practices of teachers and teacher educators as they work at improving the relationship between education and the economy. One approach which is missing from my inquiry, as an educational researcher, is that of collaborative action research. In this approach groups of people with shared concerns come together to improve their practice and to research the processes which the aim of developing more appropriate theories of educational change.

One way I could demonstrate that I am becoming more self-reflexive in my educational research would be to help to create and sustain a collaborative action research approach to improving the relationships between education and the economy in Iran. Starting with my own practice as a teacher educator I could gather together a community of researchers who shared my concern and who would be willing to research their own practice in this area.

Using a collaborative action research, we would define our concerns, design our plans, decide what data we would need to collect to judge the effectiveness of our actions, act and evaluate the effectiveness of our actions. As part of this process we would be constructing descriptions and

explanations of our own learning and integrate these within the process of improving our practices.

I could also extend the nature of the data I collected for judging the effectiveness of actions. The data could include examples of students' work as they developed new skills with their teachers. It could video-tapes of classroom practice to enable judgements to be made on the relationship between teacher' plan and the presentation of lessons. Transcribed conversations on the teachers' values and action plans could be gathered, to enable judgements to be made on the extent to which the teachers' values were being lived in practice.

By developing this form of educational, collaborative action research in Iran, it may be possible to address directly the problems of enabling those who lack essential skills, to gain these skills and to contribute to economic development. It may also be possible to create a form of educational theorising which can be related directly to the processes of improving the relationships between the education and economic system in my country.

CHAPTER SIX

RESULTS AND DISCUSSION

6.1 Introduction

The main objectives of this chapter are to:

- present the results of the responses of students and teachers to different parts of the questionnaires and the interview responses of senior policy makers in the Ministry of Education and key employers.
- analyse, interpret and discuss these results, compare the responses of the different samples, and link these with the review of literature, and with the background to the educational system of Iran.

The results presented here are mainly obtained from a quantitative study, the limitations of which have been discussed in Chapter Four. This needs to be borne in mind in interpreting any of the results.

6.2 Characteristics Of The Study Sample

The final phase of this study attempts to investigate high school teachers, and university students' perceptions of the relationship between secondary education and the world of work in Iran. In addition, senior policy makers and some key employers were interviewed about the ways in which educational authorities try to reform the system, and the actual performance of school leavers at the workplace. Before proceeding to an account of the statistical

analysis of results, it is worth setting out some more information regarding the samples themselves.

The main study samples were composed of 110 high school teachers and 115 university students. The teachers group consisted of 65 males (59.1%) and 45 females (40.9%). Teachers with 0-4 years teaching experiences amount to 22 (20%) whereas teachers with over 30 years' experience amount to 9 (8.2%). Among the sample 85 (77.3%) were teachers, 3 (2.7%) were head teachers and 16 (14.5%) were school counsellors and supervisors.

The students group consisted of 69 males (60%) and 46 females (40%). There were 104 who had graduated from general high schools (90.4%) whereas, only 3 students had graduated from technical and vocational schools (2.6%). The distribution of the samples from different points of view is shown in Table 6.1 and Table 6.2.

The interviews included twelve senior policy makers in the Ministry of Education, mostly among those who were members of the "Executive Council for the Fundamental Changes of Education", and also twelve employers from various fields and sectors such as electronics and software, autos, oil, textile industries and so on. The characteristics of both policy makers' and employers' samples are shown in Table 6.3 and Table 6.4.

Teachers' Characteristics		Frequency	Per cent
Sex:	Male	65	59.1
	Female	45	4 0.9
Teaching experience:	0-4 years	22	20.0
	5-9 years	21	19.1
	10-14 years	11	10.0
	15-19 years	12	10.9
	20-24 years	14	12.7
	25-29 years	11	10.0
	30+ years	9	8.2
Position in school:	Teacher	85	77.3
	Head teacher	3	2.7
	Counsellors and...	16	14.5
Qualification:	Diploma	3	2.7
	B.A	90	81.8
	M.A (M.Sc)	7	6.4
	Other degrees	8	7.3

Table 6.1: *Characteristics of the sample of secondary school teachers according to their experiences, position, qualifications, and gender.*

Students' Characteristic		Frequency	Percent
Sex	Male	69	60.0
	Female	46	40.0
Employment experiences:	0-4 years	13	11.3
	5-9 years	9	7.8
	10-14 years	3	2.6
	15-19 years	3	2.6
Type school:	General High School	104	90.4
	Technical & vocation	3	2.6
	Teacher Training Coll..	7	6.1
	Out of school study	1	.9
Year of study	First year	22	19.1
	Second year	37	32.2
	Third year	31	27.0
	Fourth year	24	20.9

Table 6.2: *Characteristics of the sample of university students according to their gender, length of employment experiences, type of secondary school, and year of study.*

Policy Makers Characteristics	Position
Educational Policy Maker 1	Deputy of the Minister of Education and Head of Executive Council for for Fundamental Reform in Secondary Education (ECFRSE).
Educational Policy Maker 2	Member of ECFRSE and Head of Educational Research Council.
Educational Policy Maker 3	Member of ECFRSE and President of Iran Academy.
Educational Policy Maker 4	Member of ECFRSE and Editor of Educational Research Journal.
Educational Policy Maker 5	Member of ECFRSE and Head of Educational Dep. at plan & Budget Org.
Educational Policy Maker 6	Member of ECFRSE and Head of Curriculum Deve. for secondar schools.
Educational Policy Maker 7	Member of ECFRSE and General Manager of TVE.
Educational Policy Maker 8	Expert in Maths
Educational Policy Maker 9	Expert in Science
Educational Policy Maker 10	Expert in Humanities
Educational Policy Maker 11	Expert in Careers Education and Guidance
Educational Policy Maker 12	Expert in Vocational Education: Industries

Table 63: *Characteristics of the sample of educational policy makers according to their positions.*

Employers Characteristics	Position	Name of Company	Number of Employees
Employer 1	Company Manager	Shaho Textile	100
Employer 2	Company Manager	Naghshin Carpet	120
Employer 3	Company Manager	Kurdistan Textile	150
Employer 4	Head of Education Dep.	Iran Khodroo (car)	7750
Employer 5	Head of Education Dep.	Ahavaz steel Mill	3820
Employer 6	Head of Education Dep.	Iran Kaveh (lorry & Track)	4500
Employer 7	Head of Education Dep.	Pars Electronic	3765
Employer 8	Head of Education Dep.	Minoo (Food & Medicine)	2700
Employer 9	Head of Education Dep.	Tehran Petro-chemical Co.	1940
Employer 10	Head of Education Dep.	Iran System (Computer)	1764
Employer 11	Head of Education Dep.	Arj (electrical staff)	3200
Employer 12	Company Manager	Healthy Products Co.	80

Table 6.4: *Characteristics of the sample of employers according to their positions, name of the company, and number of employees in the company.*

6.3 Teachers' And Students' Views About Secondary Education

In the questionnaire teachers' and students' views about secondary education's relations to economic needs were explored in order to highlight those problems which affect young people when they enter the labour market. Certain statements and questions were included deliberately to extract responses which would reveal any extreme views about different aspects of secondary education. For example, teachers and students were asked to respond to a series of statements which describe the secondary school curriculum and so on. The findings have been summarised and shown in Figures 6.1 to 6.54.

6.3.1 Required Skills And Abilities For Employment

Many research enquiries and studies have highlighted a list of skills, abilities, and qualities which are required for increasing the level of employability of young people in the present labour market. Therefore, the first area of enquiry was to identify *'to what extent the secondary school curriculum places emphasis on qualities such as: communication skills, thinking skills, positive attitudes and behaviours, responsibility, adaptability and flexibility, and team work skills'.*

As was explained in Chapter Three, employers are expected to employ those people who are able to communicate with others, to think and to act logically, to have a positive manner and positive attitudes to work, to be able to work within a group, to be able to adapt to different situations and to be able to shift from one site to another effectively (Leroux and Laflrur, 1995; Cumming, 1988). Also, as most of Iranian employers confirmed these abilities during their interviews, it is absolutely important to ask: *to what extent the secondary school curriculum places emphasis on those skills and qualities which are required for the world of work?*

This question included six sub-questions each of which would address all reasonable and related statements. However, in analysing this question, I have computed all the data about the main skills and summarised the results in the figures 6.1 to 6.6. This shows the main qualities as follows:

A: Communication Skills including the ability to :

- Understand and speak the language in which business is conducted;
- Listen to understand and learn;
- Read, comprehend and use written materials;
- Write effectively in the language in which business is conducted.

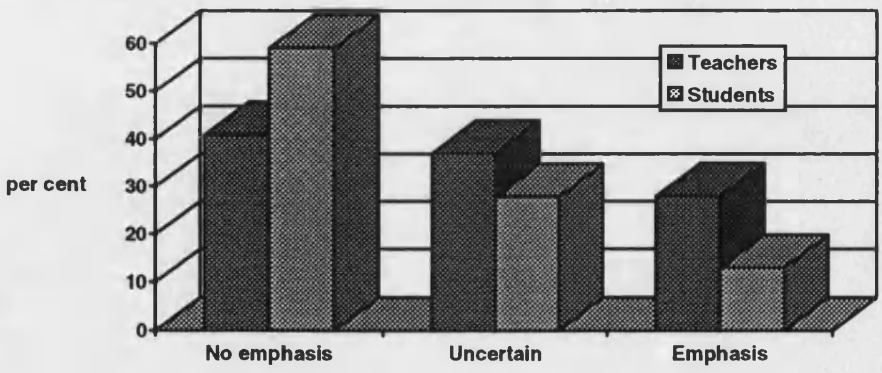


Figure 6.1: *Communication Skills in the way in which business is conducted such as reading, writing,...*

Of the teachers' sample, 40.9% believed that there is no emphasis on communications skills as opposed to 28% who believed that secondary education emphasises communication skills. While 59.1% of students mentioned that there is no emphasis on this skill compared to 13% who agreed that secondary schools emphasise these skills in the way which matches workplace requirements.

This would indicate that students' attitudes are more negative than teachers, about the schooling system concerning emphasis on this skill as a basic requirement for employment. However, both teachers and students agreed that the performance of high school students in writtens is not as good as other communication skills such as reading and speaking. According to the school curriculum subjects for teaching 'Literature, Grammar, and Essay' which is 200 hours during an academic year, school leavers' performance is not satisfactory at all (ME, 1990).

B: Thinking Skills including the ability to :

- Think critically and act logically;
- The ability to evaluate and to compare situations;
- Make decisions;
- Solve and understand problems;
- Access and apply specialised knowledge from various fields;
- Solve problems involving mathematics and use the results;
- Research in different ways;
- Analyse statistical data creatively.

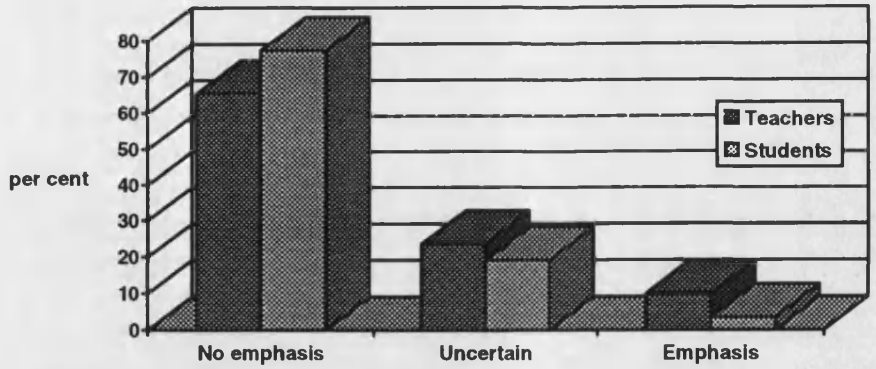


Figure 6.2: *Thinking Skills - problem solving, decision making, evaluation,...*

Of the teachers' sample, 65.5% believed that there is no emphasis on thinking skills as opposed to 10% who mentioned that secondary education emphasises this skill. While, 77.4% of students believed there is no emphasis on this skill in the school curriculum compared to 3.5% who agreed that secondary schools emphasise these skills.

The weaknesses of the schooling system in this field is clear and can be seen from the strong agreement not only between the two groups of teachers and students, but also between males and females where 71.6% of males and 72.2% of females agreed that the school curriculum direction is not emphasise critical thinking abilities.

C: Positive Attitudes and Behaviours including:

- Self-esteem and confidence.
- Honesty, integrity and personal ethics.
- A positive attitude toward learning, growth and personal health.
- Initiative, energy and persistence to get the job done.

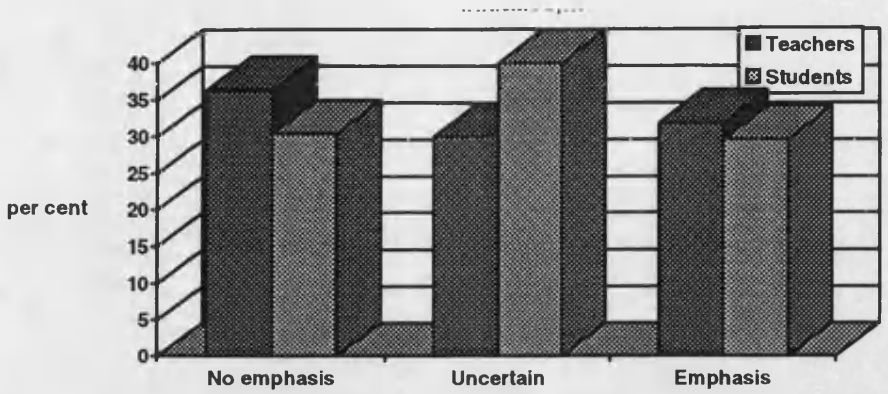


Figure 6.3: *Positive Attitudes and Behaviours - self-esteem, initiative,...*

Of the teachers' sample, 36.4% believed that there is no emphasis on positive attitudes and behaviours as opposed to 31.8% who mentioned that secondary education emphasises this attitude. 30.4% of students agreed that there is no emphasis on this aspect compar to 29.6% who agreed that secondary schools do emphasise this quality. There would seem to be very little difference in the attitudes of teachers and students for this item. Similar results are obtained when we analysed this question by gender.

One way to understand why nearly equal responses were given to this question may be that, since the Islamic Revolution in 1979, the government has emphasised moral behaviour as a positive social and personal characteristic which affects school policies for a new moral society. Therefore, in order to achieve that society, priority has been given to focusing on those subjects which encompass this revolutionary mission. This is can be seen from the range of courses, activities and programmes which schools provide for their pupils.

D: Responsibility including:

- The ability to set goals and priorities in work and personal life;
- The ability to plan and manage time, money and other resources to achieve goals;
- Accountability for actions taken.

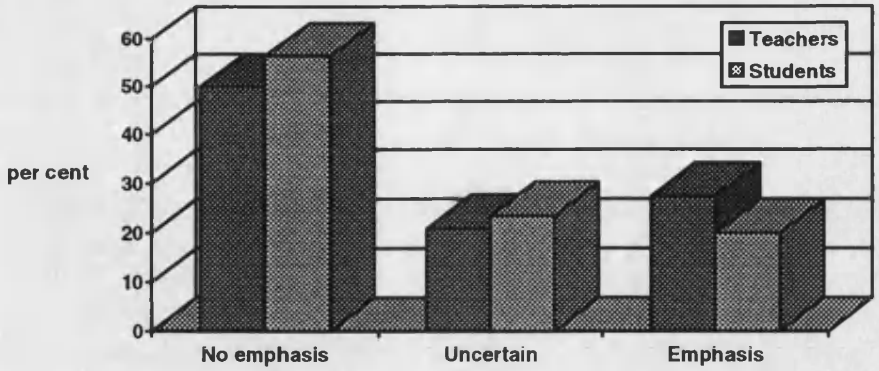


Figure 6.4: *Responsibility - setting goals and priorities in work,...*

Of the teachers' sample, 50% believed that there is no emphasis given to the goal setting and priorities in work, such as an ability to plan and manage resources to achieve goals and so on as opposed to 27.3% who mentioned that secondary education emphasises these abilities. While 56.5% of students said there is no emphasis given to this matter as opposed to 20% who agreed that secondary schools do emphasise these qualities. Also analysing the result by gender indicates a very similar attitudes among males and females to this statement.

Perhaps, it is possible to connect these sorts of abilities to critical thinking skills. The ability to set goals and priorities for a purpose, or to plan and manage resources needs a certain level of critical thinking, for example, decision making, problem solving and the ability to evaluate and compare between two or more situations. Therefore, in a system in which no priority and emphasis is given to thinking skills, it is impossible to prepare pupils to do something for which they have not got the basics?

E: Adaptability and Flexibility including:

- A positive attitude toward change;

- Recognition of and respect for people's diversity and individual differences;
- The ability to identify and suggest new ideas to get the job done creatively;
- The ability to work in different situations;
- The ability to work with new tools, instruments and in new situations;
- Use technology and information systems effectively.

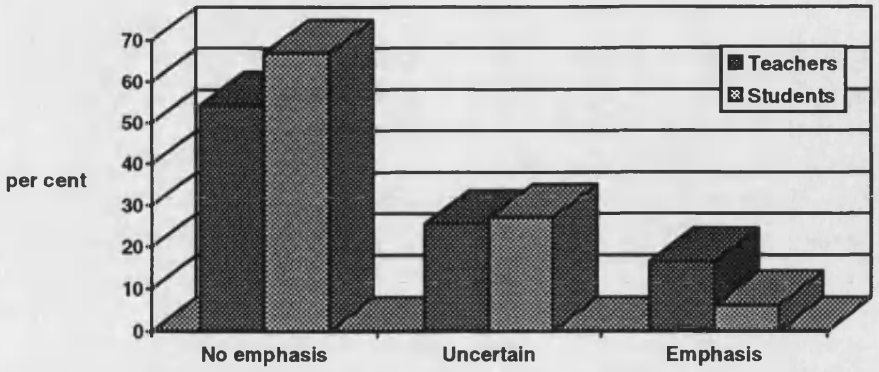


Figure 6.5: *Adaptability and Flexibility - the ability to work in different situations,...*

Of the teacher sample, 54.5% believed that there is no emphasis on the ability of adaptability and flexibility at work as opposed to 16.4% who mentioned that secondary education emphasises this skill. While 67.% of students have said there is no emphasis on this aspect compared to 6% who agreed that secondary schools emphasise these qualities. No significant difference was identified between males and females regarding this question; 56.8% of males and 69.7% of females agreed that no emphasis is given flexibility and adaptability as an important skill for a modern economy.

This would suggest that where an economic system is based on manual jobs and unskilled workers, the educational system can continue on its traditional way. But, when the economy and business are changing rapidly and where there is a post-Fordist industrial model, people require those skills and abilities which help them to shift from one job to another. So, this makes new demands of issues educators and policy makers making them rethink how they may reform educational system to deal with these new conditions.

F: Team Work Skills including the ability to :

- Understand and contribute to group or organisational goals;
- Plan and take decisions with others and support the outcomes;
- Understand and work within the culture of the group;
- Respect the thoughts and opinions of others in the group;
- Exercise "give and take" to achieve group results;
- Seek a team approach as appropriate;
- Exercise group leadership skills for high performance.

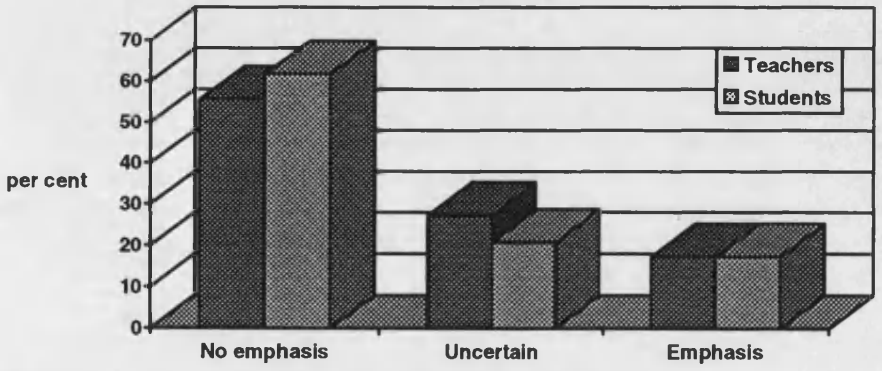


Figure 6.6: *Team Work Skills - understanding and working in group,...*

Of the teacher sample, 56% believed that there is no emphasis on team working skills as opposed to 27.3% who mentioned that secondary education does emphasise this skill. While 61.7% of students said there is no emphasis on this ability compared to 17.4% who agreed that secondary schools do emphasise this skill. Also analysing results by gender there appears to be very little difference in the attitudes of males and females to this question: 58.2% of males and 59.1% of females agreed that in the school curriculum no emphasis was given to the 'team work skills'.

It is perhaps the lack of emphasis on co-operative activities in schools such as group discussions and also the lack of involvement of students in the learning process, that lead to school leavers having a lot of difficulty where they have to work in a group. One company's manager in the interviews highlighted that *"school graduates have not been taught to tolerate others. They are unable to work in a*

group. Their performances are more unacceptable where they are working with others than where they are alone. We receive every day many requests from employees concerning changing their posts in the company. I think school should prepare them for co-operative and group working and may be it is not enough to start at the secondary level. Our educational system should emphasise this important matter from very early on even from nurseries".

Statistical differences between teachers and students and males and females were tested using a chi-square (x^2) test. The null hypothesis was rejected at the 5% level. There appears to be very little difference in the attitudes of both teachers and students to most of the items investigated (see Table 6.5). The same statistical tests also shown that there is no real difference in the views of males and females in both groups (Appendix 6.1). However, we can reject the null hypothesis at the 5% level in the majority of cases except the following items:

- Communications Skills;
- Adaptability and Flexibility.

Questions	Chi-squ	N	DF	Sig. 5%
1.a: Communications Skills	8.96	225	3	0.011
1.b: Thinking Skills	5.37	224	3	0.068
1.c: Positive attitudes and behaviours	2.28	223	3	0.320
1.d: Responsibility	1.86	223	3	0.394
1.e: Adaptability and Flexibility	6.91	221	3	0.032
1.f: Team Work Skills	1.34	225	3	0.512

Table 6.5: *Required skills and abilities, chi-square by group (teacher, student).*

The responses of high school teachers and university students were mostly similar about the kind of emphasis in the school curriculum which takes place regarding required skills and qualities for the youth employment. This result

revealed that the skills which are the basic skills needed by all types of jobs, have not been addressed properly in the school programmes. According to the responses the only positive point of schools in this respect is the focus on positive behaviour and manners in students. However, with a brief look at the subjects which students in all branches of secondary education should study, two points will be raised. First, it seems that if these subjects were to be reordered and restructured, they would prepare students for the required skills for employment. But the current schooling system is an ill-developed system which includes an ill-arranged liberal curriculum. Second, perhaps we should assume that what we need to make our young people employable, is a reconsideration of the whole process of our schooling system and highlighting reasons of the system' weak performance.

This result is similar to those claims of educational studies in both developed and developing countries that what is going on in schools is not what a changing economy requires. So in order to match these two systems with each other, we repeat Ascher's (1987), Zuga's and Lindstrom's (1989) and other authors' comments that public school programmes should prepare students to have a broad range of basic skills so as to be able to cope with a rapidly changing industry.

This finding raises the question of how policy makers must restructure secondary school curricula so as to include appropriate subjects and materials

and also the question of the right way to present and to teach these subjects to students.

6.3.2 Education-Industry Relations

The second area of enquiry was the nature of the relationship between the school system and industry, how educational systems can be more effective in this respect, and to what extent and how industrialists should participate in the educational process. It is also important to look at the linking of education and industry to see what range of opportunities is provided for pupils to demonstrate that the realities of the world of work has different forms in industrial societies. An important aim for this partnership is to improve the preparation of young people for future work and to cater for unemployment amongst young people.

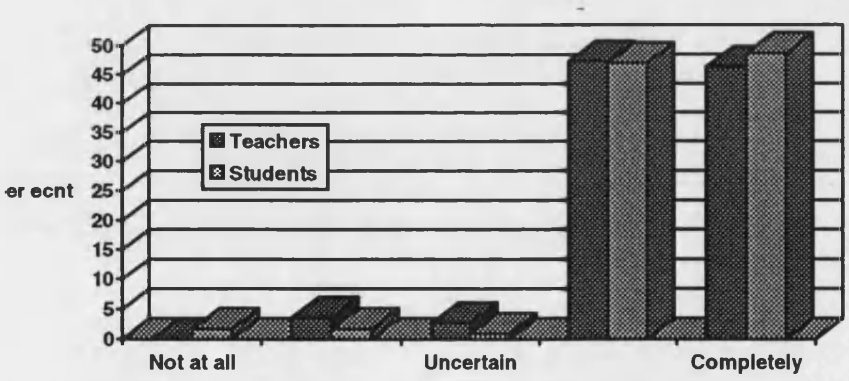


Figure 6.7: *Do you think that there should be a connection between the needs of the labour market and the high school curriculum?*

Of the teachers' sample, 46.4% strongly believed (see graph: under the word "Completely") and 47.3% believed (to a large extent), that a connection between the school curriculum and labour market needs is required, as opposed to 3.6% who agreed to a little extent upon the linking of the school curriculum and labour market. While 48.7% of students strongly believed and 47.% agreed with

the statement to a large extent compared to 1.7% who agreed to a little extent and 1.7% who mentioned that this connection is not required at all. This would indicate that both teachers and students felt with the strengthening of the relationship between education and industry, young people could hope for get employment in the labour market.

However, as this study shows a basic condition for better preparation of young people for the world of work is more involvement of industrialists in the educational process by exchanging of experiences and views about what is going on in the labour market.

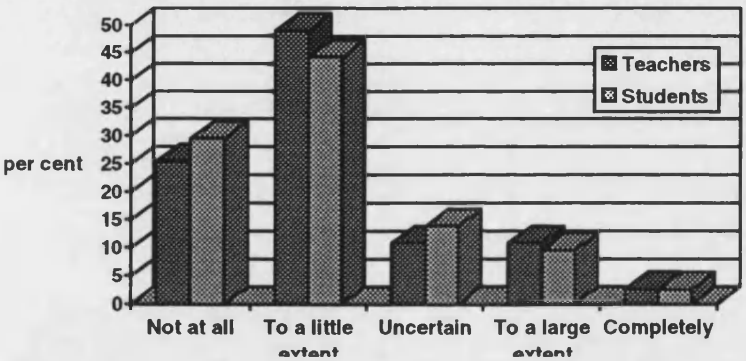


Figure 6.8: *Do you think that curriculum policy makers have taken into account the labour market needs of the economy in designing the present high school curriculum?*

Many problems in Iranian secondary schools which hinder those schools from achieving their objectives are rooted in the structure of the central organisation which is in charge of developing the school curriculum. In fact, for many reasons there is not a strong commitment to link education to the economy by curriculum policy makers. Unsurprisingly then, teachers and students responded positively that curriculum policy makers have not taken into account the labour market needs in designing the present high school curriculum. In the teachers' sample, only 2.7% believed that the labour market

needs had been completely addressed in designing the present high school curriculum and 10.9% believed this to a large extent. Similarly 2.6% of students agreed completely and 9.6% agreed to a large extent with the statement which is shown in figure 6.8.

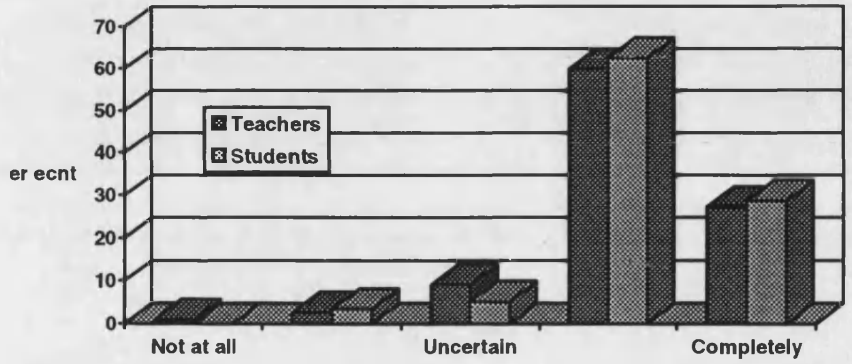


Figure 6.9: *Do you think that industrialists should be involved in the designing the high school curriculum?*

The teachers' response to the question *"Do you think that industrialists should be involved in the designing the school curriculum"* indicated clearly that most agreed to a large extent (60.%) and 27.3% completely with this statement. Only 2.7% said to a small extent and 0.9% who mentioned that involving of industrialists in the curriculum planning is not required. Similarly 28.7% of students believed in this completely and 62.6.% said that involving of industrialists in the developing of the high school curriculum is required to a large extent, while only 3.5% responded that this participation is required to a small extent.

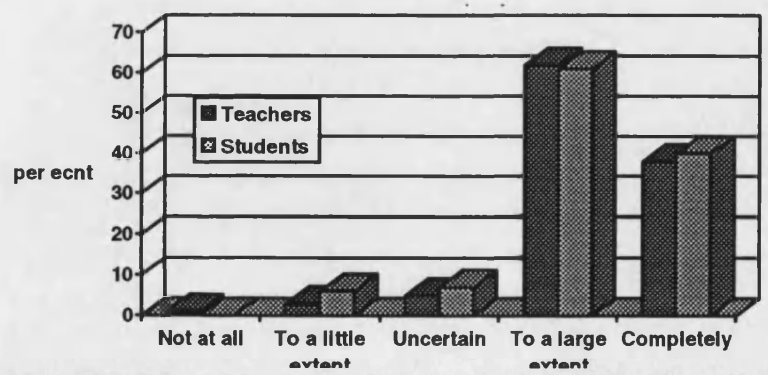


Figure 6. 10: ***Do you think that the high school curriculum should be sensitive to local employment*** *circumstances?*

This shows that in total 90% of the teachers and similarly 88% of the students felt that sensitising the high school curriculum to local employment circumstances is necessary as opposed to 3.5% of the teachers and 5.2% of the students who disagreed.

In most of the developing countries different regions have different economic sectors and activities. Therefore, it is necessary that central government develops a flexible policy in which local authorities in different areas are able to address local and regional matters in their school programmes.

In addition to the above analysis, significance was tested using a chi-square test. The null hypothesis was rejected at the 5% level. There appears to be very little difference in the attitudes of both teachers and students to all of the items investigated (see Table 6.6). Moreover, analysis of males' and females' attitudes concerning these questions has shown that there is no significant difference between their views (Appendix 6.1). However, we can reject the null hypothesis at the 5% level in the all of cases. This would indicate a high level of agreement between teachers and students about the present nature of the school-industry relations, and how these should be.

Questions	Chi-squ	N	DF	Sig 5%
2. Do you think that there should be a connection between the	4.66	225	4	0.324
3. Do you think that curriculum policy makers have taken	1.12	224	4	0.891
4. Do you think that industrialists should be involved in the ..	2.83	225	4	0.586
5. Do you think that the high school curriculum should be ..	2.69	223	4	0.611

Table 6.6: *Education-Industry Relation, chi-square by group (teacher, student)*

Consequently, the majority of both teachers and students pointed out that:

- it is necessary that the requirements of labour market are addressed in the school curriculum;

- It is essential that industrialists be involved in the development of the high school curriculum;
- It is important that the school curriculum is sensitive to local employment circumstances; and
- Curriculum policy makers have ignored the labour needs of economy and industry in the developing of the current school curriculum.

We can reorder the above four comments in an equation which takes into account economic needs in the school curriculum by policy makers on one side and the other three points on the other side:

Addressing economic industrial needs in the school curriculum	⇒	Connecting labour market and schooling system	+	Involving industrialists in the development of the school curriculum	+	Making the school curriculum sensitive to local and regional employment needs

As basic outcome of this process, this study suggests a decentralised curriculum development in the country is more helpful. It also highlights that economic needs needs to be addressed in our schooling system; as a consequence of this, we must develop school-industry connections, which will then increase involvement of industrialists in the developing curriculum and this in turn will highlight local and regional circumstances which need different remedies. The current Iranian schooling system at secondary level, may be seen negatively as industrial and economic requirements have not been addressed in the curriculum. There is thus no attempt to link schools to industry, to involve employers in the curriculum designing, or to decentralise the educational system to cater for local needs.

6.3.3 Curriculum Characteristics

Approximately 90 per cent of the students in secondary schools studied non-vocational courses in the 1995/1996 academic year. As I have pointed out earlier in the general high school students can follow one of the main three paths: Maths, Sciences, or Humanities. Again, according to the Ministry of Education, most students prefer Humanities (Social Sciences). A third area of the current enquiry, was to ask teachers and students about the emphasis in the current high school curriculum. Is it a theoretically or a practically-based curriculum, or is it a curriculum with a mixture of both theoretical and practical activities? How can the school curriculum be described?

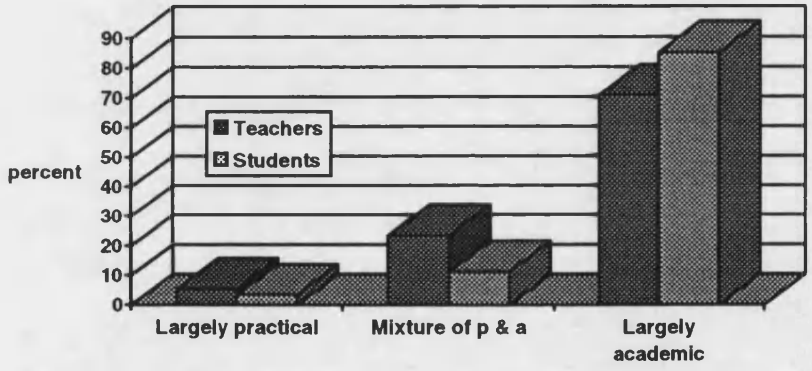


Figure 6.11: *What do you think is the emphasis of the current high school curriculum?*

As figure 6.11 shows, while 70% of the teachers and 85.2% of the students said that the current high school curriculum is largely academic, only 5.5% of the teachers and 3.5% of the students believed that the emphasis of the current high school curriculum is largely practical. 23.6% of the teachers believed that the curriculum's emphasis is on both practical and academic. It may indicate that for some of the teachers, those courses and sessions which involve students and teachers in laboratory work, for example chemistry, is seen as a practical

curriculum. But it is clear that there is no other large-scale practically-based learning and activities in any of these paths.

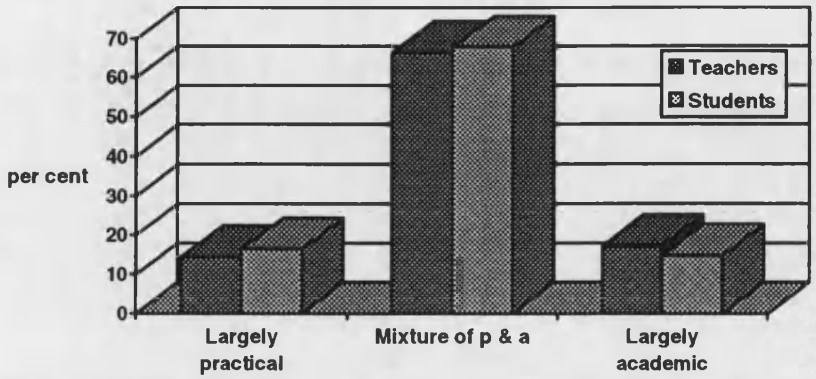


Figure 6.12: *Which high school curriculum, do you think the majority of the parents prefer?*

According to the most (66.4%) of the teachers' responses, and also 67.8% of the students, the majority of parents prefer a mixture of both practical and academic curricula for high schools. For parents, possibly, two important factors are significant: on the one hand, the prestige of the type of study, curriculum and schooling system, the vocational opportunities for their children on the other. Both the academic curriculum and technical and vocational education have advantages and disadvantages, the academic system provides access to white collar jobs and higher education in a highly competitive situation, but it does not give any specific skills to pupils for their future employment. And technical and vocational systems which focus on practical and applied education with a lesser theoretical basis, will give a better chance to obtain employment in an economic system in which skilled people are welcomed, but it lacks high social status. Fewer parents are happy to opt for this kind of education. Therefore, if these two can be combined by parents, this

will perhaps result in not only keeping a higher position for their children in the near future, but also ensuring their future employment.

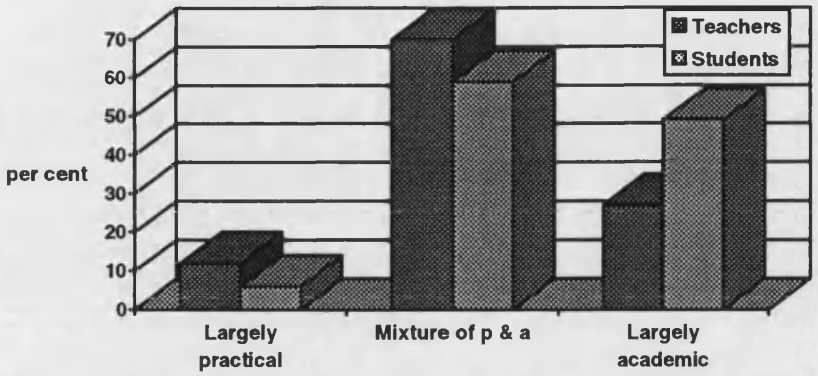


Figure 6.13: *Which high school curriculum, do you think the majority of the school governors prefer?*

In figures 6.13, 6.14, and 6.15 it is evident that most of the teachers and also most of the students agreed that developing a mixture of both practical and academic curricula for secondary schools is a concern of the majority of the school governors, teachers and students. This would indicate that all of these groups are looking for same thing, which is a successful life for young people after school from an employment point of view. Thus, a common feeling between teachers and students can be identified in this respect.

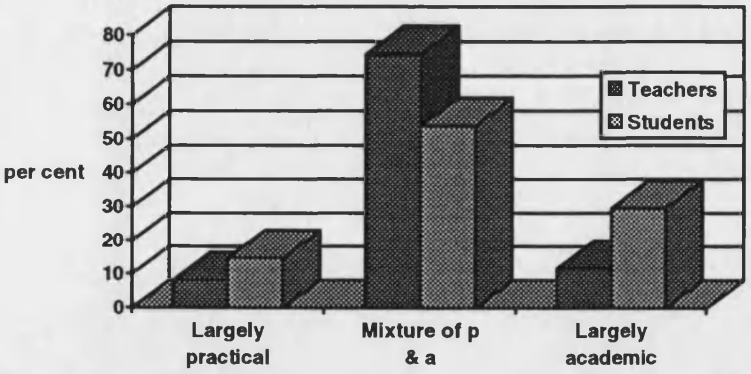


Figure 6.14: *Which high school curriculum, do you think the majority of the teachers prefer?*

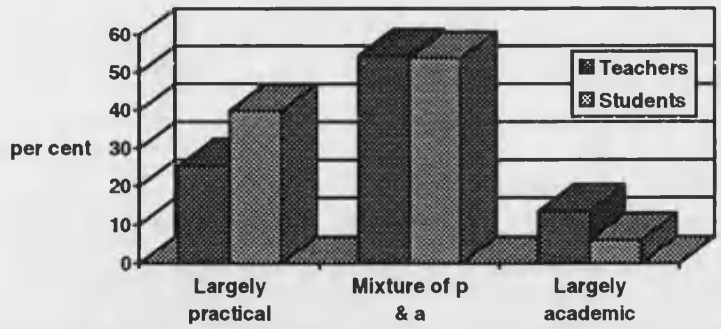


Figure 6.15: *Which high school curriculum, do you think the majority of the students prefer?*

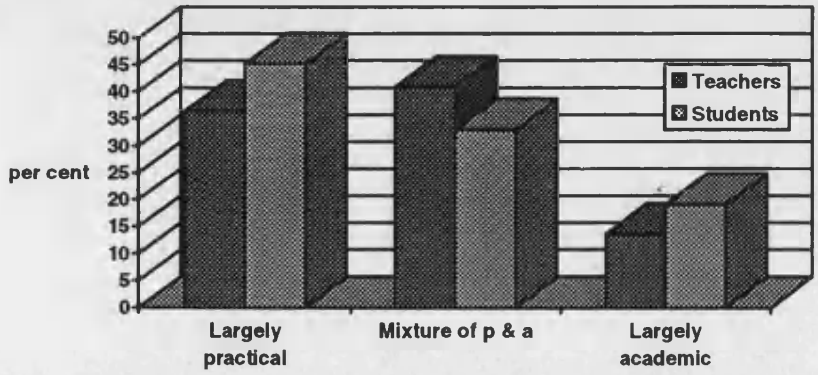


Figure 6.16: *What sort of curriculum, do you think would maximise the employment chances of students?*

Most teachers and students felt that schools with largely academically-based curricula are unable to increase or maximise the employment chances of students, whereas only 13.6% of teachers and 19.1% of students suggested that a largely academic curriculum would help students to have more employment chances after school (Figure 6.16). Basically, the vocational movement in which educational policy makers have tried to balance practical and theoretical subjects in the school curriculum has been accepted by many developing countries as a solution for reducing youth unemployment (Abrokaw, 1995).

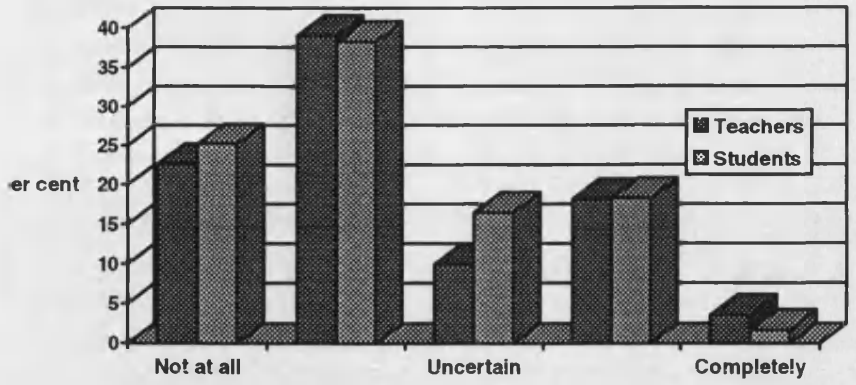


Figure 6.17: *Do you think that there is any connection between the teaching methods used in the curriculum and the employment chances of pupils?*

In the teachers' sample, only 22% completely or to a large extent believed that there is a relationship between teaching methods and the employment chances of pupils, the majority of them, 62% agreed to a small extent that there was a connection between teaching methods and the employment chances of pupils or mentioned that there is not at all such a connection between those two. Similarly, 54% of students denied or agreed to a small extent upon the existence of a connection between teaching methods and the employment chances of pupils, and only 20% of students agreed with the existence of such a relation.

A work-related education requires a work-related teaching approach. Obviously, it will not be achieved without regular teacher education-industry partnerships. Since there is no way that teachers can get into industry in Iran and they have little experience about the realities of the workplace, and how they can adapt their teaching methods to fit the workplace situation. It is very necessary that teachers either through schools or teacher training institutions, come to have a closer relationship with industry. In this respect, the process of curriculum development needs to be reformed too.

Many studies have shown that careers education is an important aspect of the educational system particularly when we are talking the about preparation of young people for the world of work. Indeed, it is a fact that if young people want more employment opportunity, they will need to gain more experience of those careers and fields in which they will engage later. There is a high level of agreement between teachers and students regarding the necessity of careers education in the secondary school curriculum as is shown in figure 6.18.

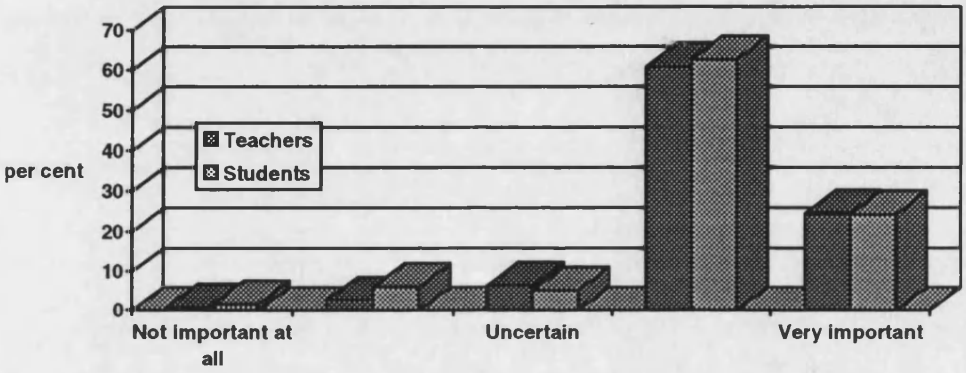


Figure 6.18: *How important do you think career education should be in the high school?*

When teachers were asked about whether careers education should be emphasised or not in the school curriculum, 85% of them believed it to be very important or important as opposed to about only 3.6% who believed it is not important or not important at all. 87% of students also believed that this is an important factor in young people's education as opposed to less than 8% who believed it not important. This shows strong support for providing an opportunity for students in secondary school which may serve as a basis for youth employment.

Although, there is no doubt about the positive impact of careers education and guidance services on preparing young people for work, it seems that teacher

which that Iranian schools have not applied this factor yet to help their students make career choices.

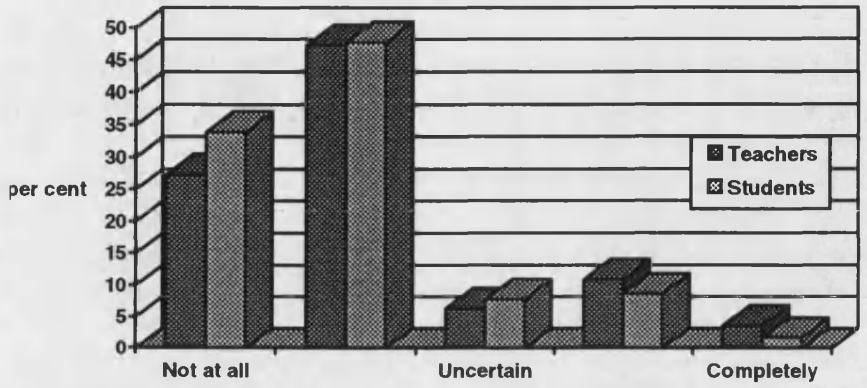


Figure 6.19: *To what extent do you think, schools use the career education and guidance services to help their students make career chances?*

Only 14% of the teachers mentioned that schools use careers education and guidance to help their students make careers choices, while 75% believed that school do not use these services at all or they use that to a small extent. Similarly, 10% of students believed that schools use the careers education and guidance as opposed to 82% who agreed that schools do not avail themselves of this service at all or agreed to a small extent regarding the use of the careers education and guidance at schools.

When teachers and students were asked, *"which of the following statements accurately describes the current high school curriculum?"*, to respond to this question which included few statements about the present curriculum in the secondary schools, there was no significant difference between their views about the present curriculum.

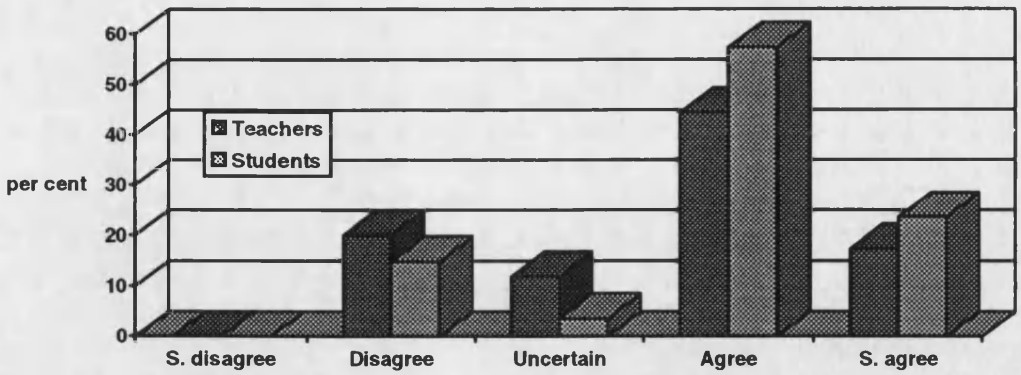


Figure 6.20: *The high school curriculum does not take into account the future employment needs of students.*

Of the teachers' sample, 17.3% strongly agreed and 44.5% agreed with the statement as opposed to 20% who disagreed. Similarly 23.5% of students strongly agreed and 57.4% agreed that the high school curriculum does not take into account the future employment needs of students, only 14.8% of them disagreed with the above statement.

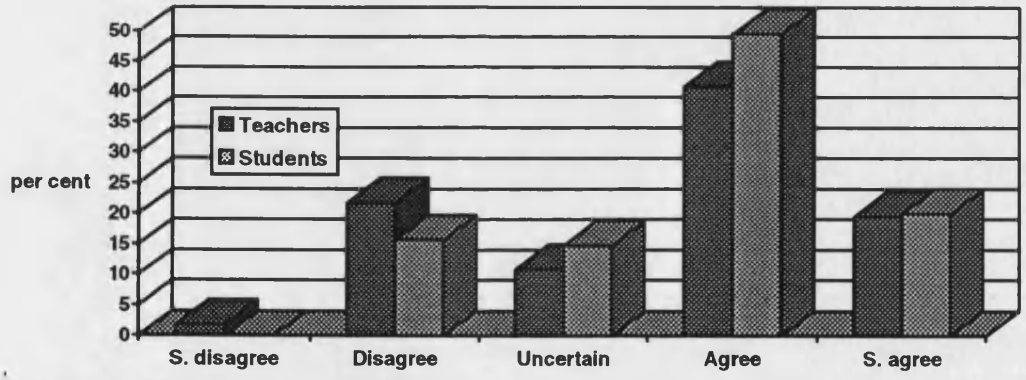


Figure 6.21: *The high school's methods of teaching are not appropriate for the future employment needs of students.*

In total, 60% of the teachers' sample, agreed with the statement as opposed to 24% who disagreed. 70% of students also agreed that the high school's methods of teaching are not appropriate for the future employment needs of students compared to only 15.7% who disagreed with the above statement.

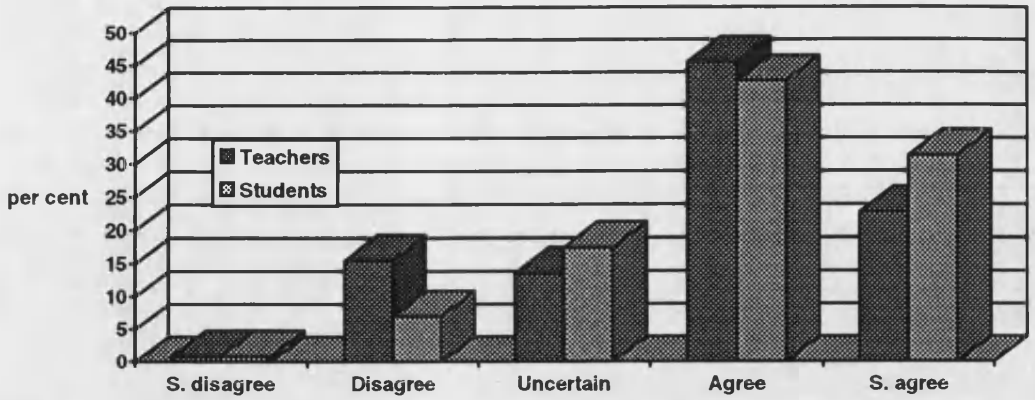


Figure 6.22: *The high school curriculum is not adequately resourced.*

The teachers' response to the statement, *the high school curriculum is not adequately resourced* indicate clearly that most agreed (45.5%) and strongly agreed (22.7%) with this statement. Only 15.5% disagreed and 0.9% strongly disagreed regarding the inadequate resourcing of the high school curriculum. The students' response also revealed that they felt similarly where most of them agreed (42.6%) and strongly agreed (31.3%) with this statement while only 7% disagreed and 0.9% strongly disagreed.

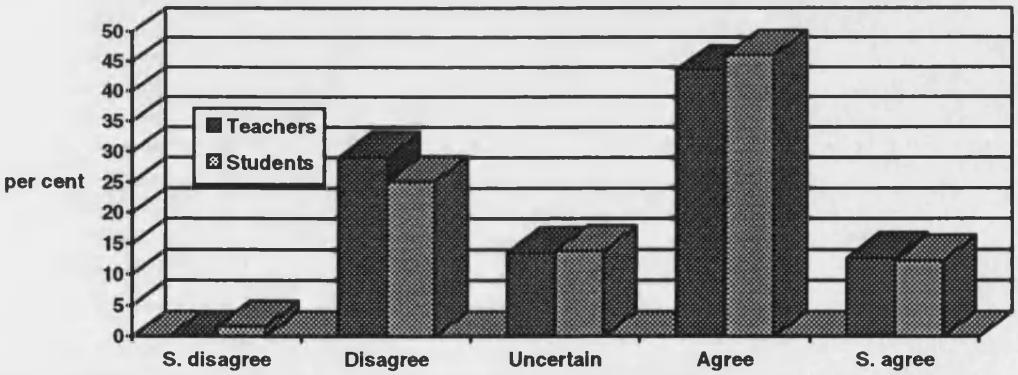


Figure 6.23: *The elements of the high school curriculum are not sufficiently integrated.*

This would indicate that in total 57% of the teachers agreed that the elements of the high school curriculum are not sufficiently integrated. 29.1% disagreed with the above statement. Similarly 58% of students agreed with this curriculum weakness as opposed to 27% who disagreed as to the inadequate integrating of the high school curriculum elements.

Secondary school teachers and students in this study agreed that theoretical and practical aspects of any subject should be integrated in such a way that both aspects should be emphasised. Integration of both academic and technical vocational education courses fulfil the recommendations of UNESCO, i.e., that a new system of life-long education, in which TVE and academic subjects are both an integral part of a unified system of education, will reduce barriers between academic and TVE courses. This result was thus consistent with the finding of Poole and Zahun (1986) who concluded that neither academic nor vocational education alone could provide the skills needed for jobs in the future, and of Pautler (1986) who indicated that a solid foundation of general skills and knowledge are needed by vocational education students.

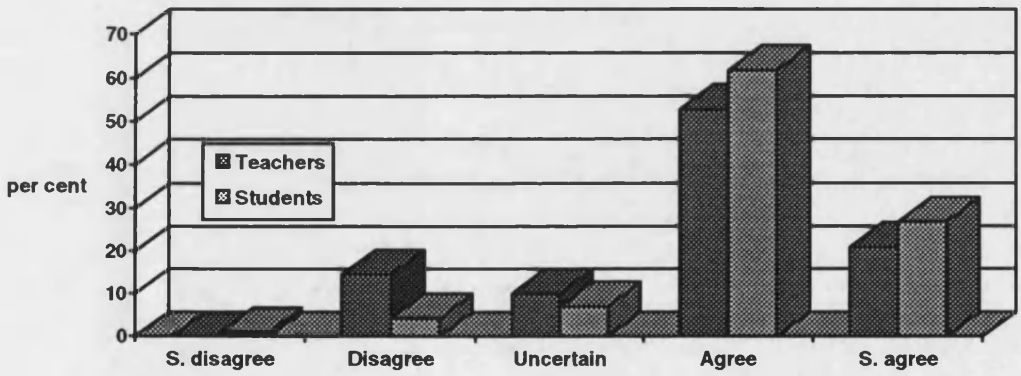


Figure 6.24: *The world of work is not emphasised sufficiently in the high school curriculum.*

The teachers' response to the statement, *the world of work is not emphasised sufficiently in the high school curriculum* showed clearly that most agree (52.7%) and strongly agreed (20.9%) with this statement. Only 14.5% disagreed with this statement which would indicate that they believed there may be a relationship between this problem and youth unemployment after school. On the other hand while 61.7% of students agreed and 26.1% strongly agreed with

this statement, only 4.3% of them disagreed and 0.9% strongly disagreed that there is not sufficient emphasis on the world of work in the high school curriculum.

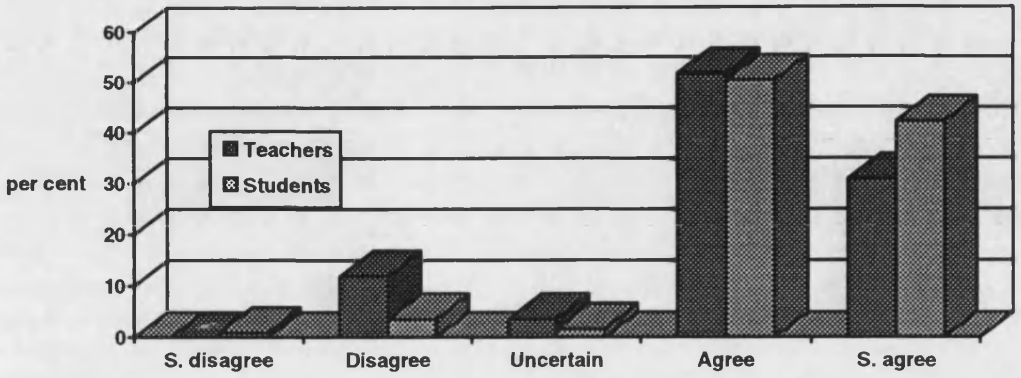


Figure 6.25: *The high school curriculum is too concerned with the development of theoretical rather than practical knowledge.*

Of the teachers' sample, 51.8% agreed and 30.9% strongly agreed with the statement, that *'the high school curriculum is too concerned with the development of theoretical rather than practical knowledge'*. Only 11.8% of them disagreed with the above statement. The students' responses to the above statement indicate clearly that most agreed (50.4%) and strongly agreed (42.6%) that the high school curriculum is too concerned with the development of theoretical rather than practical knowledge. Only 3.5% of them disagreed and 0.9% strongly disagreed with this statement.

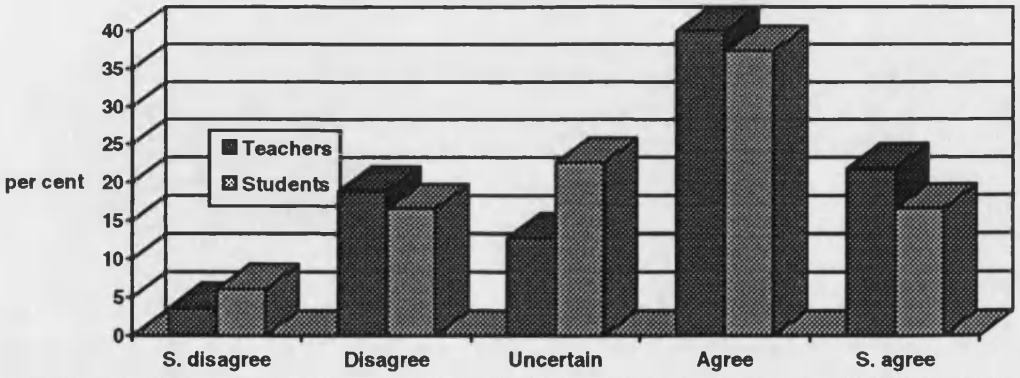


Figure 6.26: *The practical elements of the high school curriculum are not taught in conjunction with local industry.*

The teachers' response to the statement, that *'the practical elements of the high school curriculum are not taught in conjunction with local industry'*, revealed that most agreed (40%) and strongly agreed (21.8%) with the statement. While 18.2% disagreed and 3.6% strongly disagreed upon the lack of match between the practical subjects of the school curriculum and local industry. Similarly the students' response to the above statement indicate that 37.7% agreed and 16.5% strongly agreed with this statement. 16.5% of students disagreed and 6.1% strongly disagreed regarding the lack of match between practical subjects of the school curriculum and local industry.

Results based on using chi-square and (.05) level of significance thus reveal some difference in the attitudes of teachers and students to the items investigated (see Table 6.7). However, we can reject the null hypothesis at the 5% level in the following cases: questions number 7, 11, 12, 13, 14, 15b, 15c, 15d, and 15g. Although, the analysed data by gender revealed a very small difference in the views of males and females to the related questions. We hence can reject the null hypothesis at the same level in the majority of items except in question 15c (Appendix 6.1). That means a high level of agreement among males and females' views to this section than teachers and students in this study.

Questions	Chi-sqq	N	DF	Sig. 5%
6. What do you think is the emphasis of the current high ..	6.99	225	2	0.030
7. Which high school curriculum, do you think the majority	0.37	222	2	0.830
8. Which high school curriculum, do you think the majority	9.33	223	2	0.009
9. Which high school curriculum, do you think the majority	14.64	217	2	0.001
10. Which high school curriculum, do you think the majority	6.77	218	2	0.034
11. What sort of curriculum, do you think would maximise	2.81	212	2	0.245
12. Do you think that there is any connection between the	2.51	218	4	0.643
13. How important do you think career education should be	1.81	220	4	0.771
14. To what extent do you think, schools use the career	1.92	220	4	0.751
15.a: The high school's methods of teaching are not	9.02	217	4	0.029
b: The high school curriculum does not take into account	5.45	219	4	0.24
c: The high school curriculum is not adequately resourced.	5.87	222	4	0.209
d: The elements of the high school curriculum are not	3.09	223	4	0.543
e: The world of work is not emphasised sufficiently in the	9.94	223	4	0.041
f: The high school curriculum is too concerned with the	9.66	222	4	0.047
g: The practical elements of the high school curriculum	4.81	220	4	0.307

Table 6.7: *Type of Curriculum, chi-square by Group (teacher, student).*

This finding highlights the following points about what respondents think:

- the current secondary school's curriculum is largely academic;
- the majority of parents, school governors, teachers, and students prefer a mixed curriculum with a balance of academic and practical subjects and activities;
- both teachers and students believe that a balanced curriculum with academic and practical elements will maximise youth chances for employment;
- the methods of teaching for secondary education are not related to the employment chances of pupils;
- careers education is an important element in the secondary schools;
- clearly, schools do not use the careers education and guidance services to help and to guide their students make career choices; and they describe the current high school curriculum as a process that:
- it does not take into account the future employment needs of students;
- its methods of teaching are inappropriate for the future employment needs of students;
- it is not adequately resourced;
- its elements are not sufficiently integrated;
- it does not emphasise the world of work sufficiently;
- it is concerned with the development of theoretical rather than practical knowledge;

- its practical elements are not taught in conjunction with local industry.

This study suggests that a major issue for policy makers is how should they restructure the school curriculum and related processes and activities in which not only is the curriculum built up on a rational basis, but it directs young people towards employment opportunities. For this they need to make a curriculum which is balanced with both academic and applied knowledge, to develop control mechanisms to continuously improve the quality of schools' programmes, to review teacher education so as to develop some sort of partnerships with industries, and to provide a wide range of choices for students to continue their education to a higher level or to enter the labour market.

6.3.4 The Causes Of Youth Unemployment

The fourth area of enquiry concerned the problems and factors which related to the nature of the secondary schooling system and the affect that had on the employment chances of high school graduates. Indeed in this section, in the format of the question, *"Which of the following factors do you think affect the employment chances of high school graduates?*, we have tried to address which of those inadequacies and weaknesses of education as internal or external factors be seen as effective factors on youth unemployment, for example: *the gap between the educational system and the world of work, ignoring the role of careers education and guidance, lack of emphasis on the applied and the work-related skills in*

curriculum, not concerning to work experience and training, and ....These statements have been presented in the figures 6.27 to 6.37.

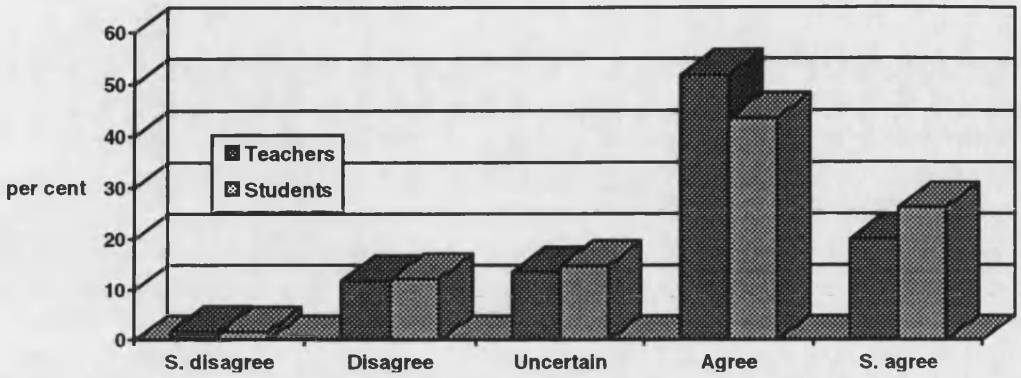


Figure 6.27: *The gap between school courses and the needs of work.*

Of the teachers' sample, 51.8% agreed and 20% strongly agreed with the statement as opposed to 11.8% who disagreed and 1.8% who strongly disagreed that the gap between school courses and the needs of work affects employment opportunities for young people. Among students, while 43.5% agreed and 26.1% strongly agreed with this statement, only a small percentage of them disagreed about the existence of any relationship between youth unemployment and the gap between school courses and the needs of work.

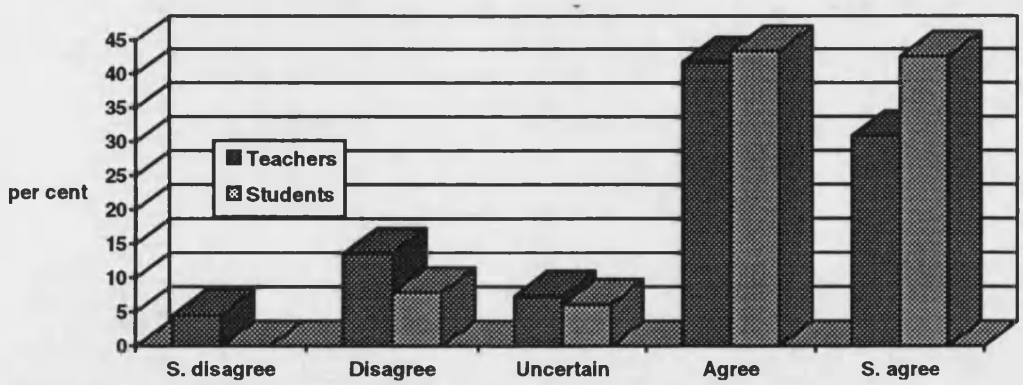


Figure 6.28: *Lack of appropriate occupational guidance and counselling.*

The majority of teachers (74%) and the majority of students (86%) as well were in agreement that the lack of appropriate occupational guidance and counselling in schools is affecting youth employment opportunities negatively.

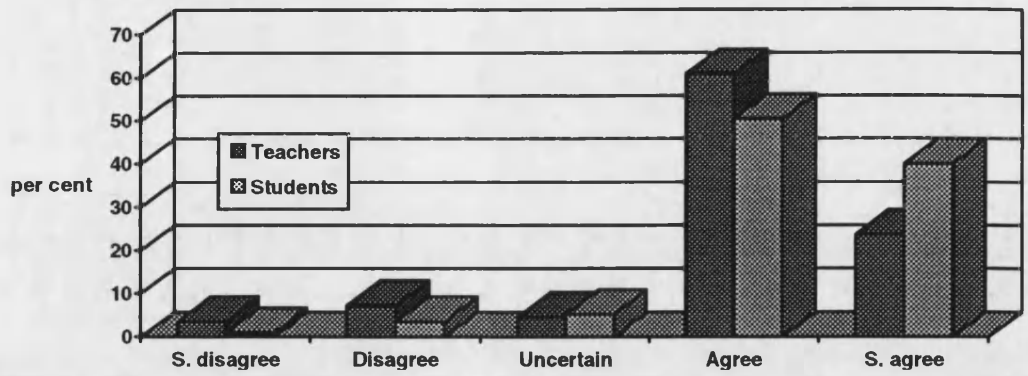


Figure 6.29: *Lack of practical and applied knowledge in the curriculum.*

The teachers' response to the statement regarding *'the lack of practical and applied knowledge in the curriculum'* indicated clearly that most agreed (60.9%) and strongly agreed (23.6%) with this statement. Only 7.3% disagreed and 3.6% strongly disagreed about the existence of any relationship between youth unemployment and the lack of practical and applied knowledge in the curriculum. In this respect, 50.4% of students agreed and 40% of them strongly agreed with this statement as opposed to only 3.5% who disagreed and 0.9% who strongly disagreed upon the affect of this factor on youth unemployment.

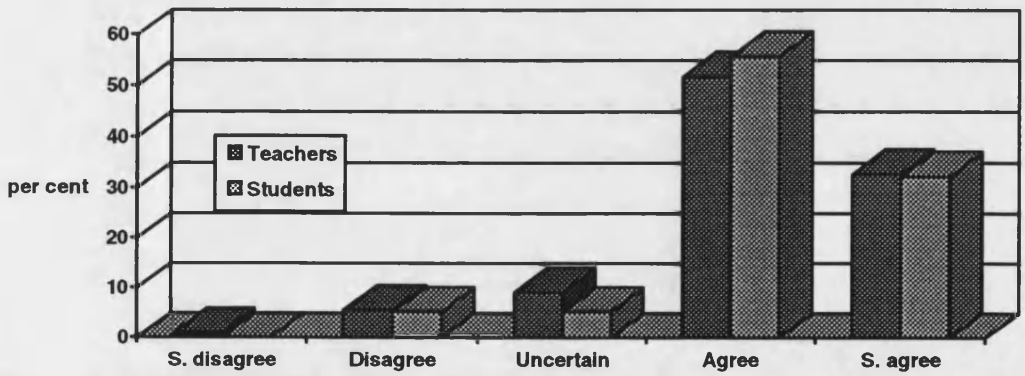


Figure 6.30: *Lack of training and internship for pupils.*

Here too, the majority of teachers (85%) and the majority of students (88%) were in agreement that the lack of training and internship for pupils in their educational programmes has affected youth unemployment. This is opposed to only 5.5% of the teachers and 5.2% of students who disagreed about the

existence of a relationship between the lack of training and internship and youth unemployment.

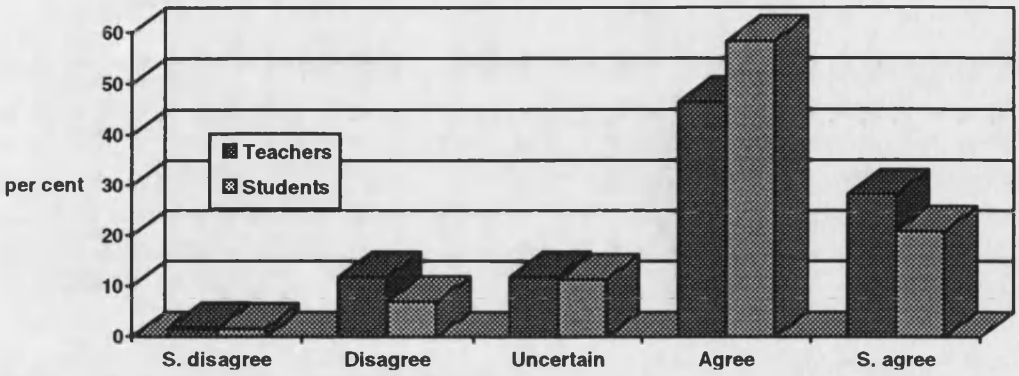


Figure 6.31: *Lack of emphasis on the significance of work in socio-economic development during the school's courses.*

The teachers generally agreed that the school curriculum does not emphasise work as a significant factor in socio-economic development: (28.2%) strongly agreed and (46.4%) agreed with this statement. Only 11.8% of the teachers disagreed and 1.8% strongly disagreed with the above statement. The students' response to the statement regarding *'the lack of emphasis on the significance of work in socio-economic development during educational' courses* indicated clearly that most agreed (58.3%) and strongly agreed (20.9%) with this statement. Only 7% disagreed and 1.7% strongly disagreed with the above statement.

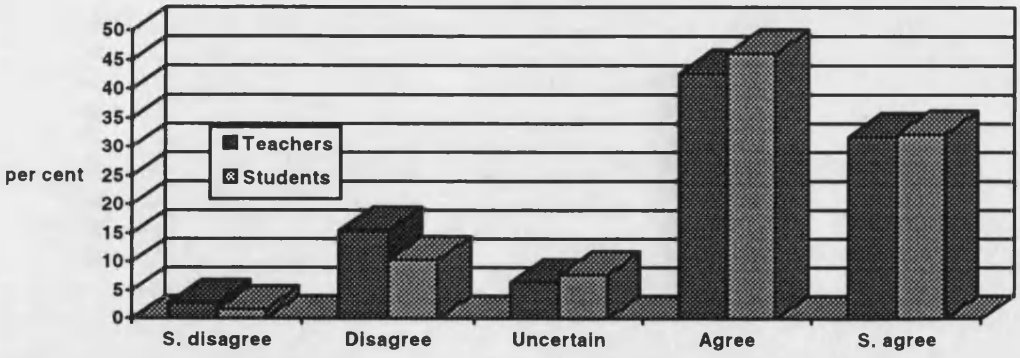


Figure 6.32: *Lack of opportunity for seeing and understanding the variety of occupations in society.*

Work experience includes various activities in which students may have a real feeling and conception about what is going on outside of school particularly in

the world of work. Work experience also shows the variety of opportunities which exist in a society. So, as Figure 6.32 shows, in total 75% of the teachers agreed that the lack of opportunity for seeing and understanding the variety of occupations in society is affecting youth employment opportunities. Only 18% disagreed with the above statement. The students' response also to the above statement indicated that in total 68% of them agree as opposed to only 12% who disagree on the existence of any relationship between youth unemployment and the lack of opportunity for seeing and understanding the variety of occupations in society.

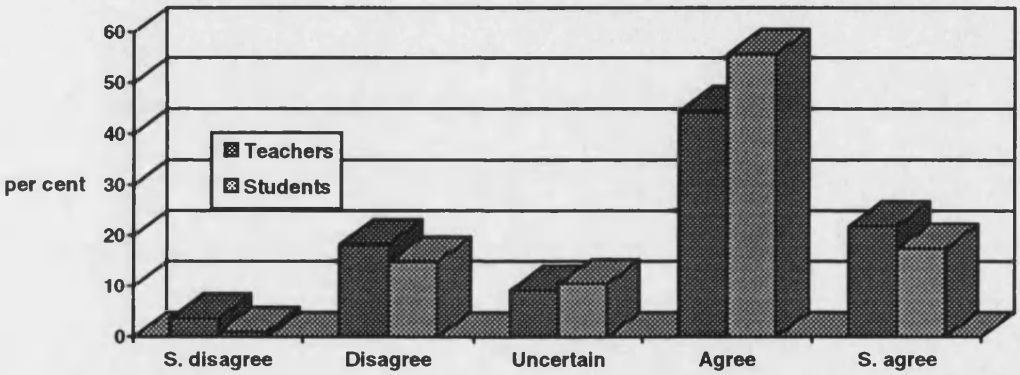


Figure 6.33: *The failure of school management and teachers to use local opportunities for connecting education and work.*

These results indicate that in total 67% of the teachers and 73% of students realised that school managers and teachers failed to use local opportunities for connecting education and work. However, 22% of the teachers and 16% of the students disagreed on the existence of any relationship between youth unemployment and the failure of school managers and teachers to use local opportunities for connecting education and work.

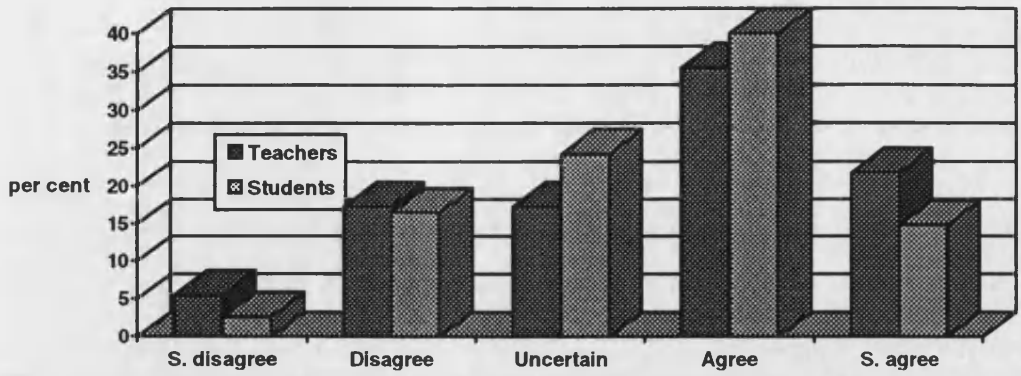


Figure 6.34: *Ignoring employer's opinions and suggestions about the curriculum.*

35.5% of the teachers agreed and 21.8% of them strongly agreed with the notion that ignoring employer's opinions and suggestions about the curriculum is one of the reasons for the inappropriateness of the curriculum regarding employment needs. 17.3% of them disagreed and 5.5% strongly disagreed with this statement. Also 40% of students agreed and 14.8% strongly agreed that in the school curriculum, employer's opinions have been taken into account. Only 16.5% disagreed and 2.6% strongly disagreed with the statement. This reveals a potentially supportive role which employers may have towards correcting the direction of educational programmes.

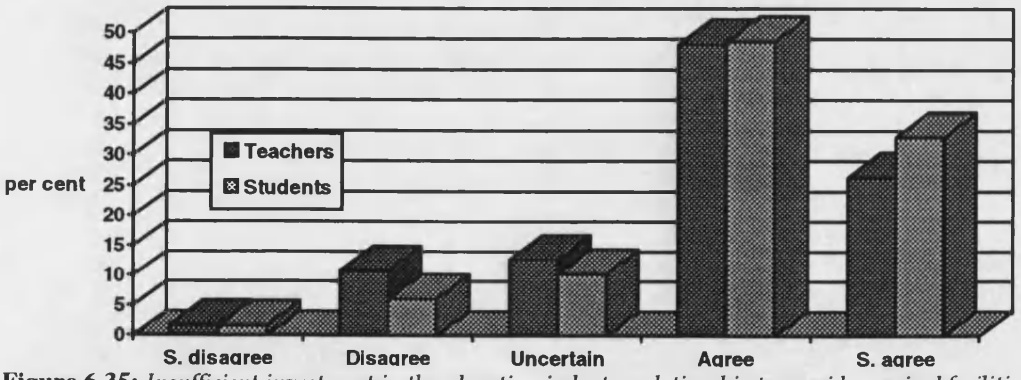


Figure 6.35: *Insufficient investment in the education-industry relationship to provide required facilities in this field.*

The teachers' response to the statement that *'there is insufficient investment in the education-industry relationship to provide required facilities'* revealed clearly that most agreed (48.2%) and strongly agreed (26.4%) with this statement. Only

10.9% disagreed and 1.8% strongly disagreed upon the existence of a relationship between youth unemployment and insufficient investment in the education-industry relationship. In this respect, 48.7% of students agreed and 33% of them strongly agreed with above statement. A small percentage of students (8%) disagreed on the existence of a relationship between youth unemployment and insufficient investment in the education-industry relationship to provide required facilities in this field.

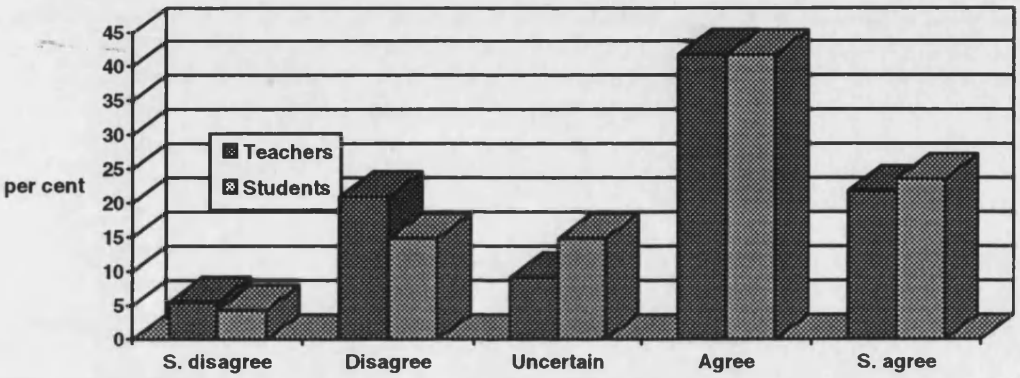


Figure 6.36: *Belief that academic courses are more useful than vocational courses.*

Traditionally, people believe that academic education is the only way that young people can access a sufficient level of knowledge and skills to help them enter the labour market with a reasonable salary and job security. The teachers' and students' responses to the above question revealed that policy makers must try to correct this misconception amongst parents and pupils in an appropriate way and with a comprehensive programme. A central point could be to make technical and vocational education more attractive. However, academic subjects are still seen by many teachers as important subjects in the secondary school curriculum, more so than TVE subjects.

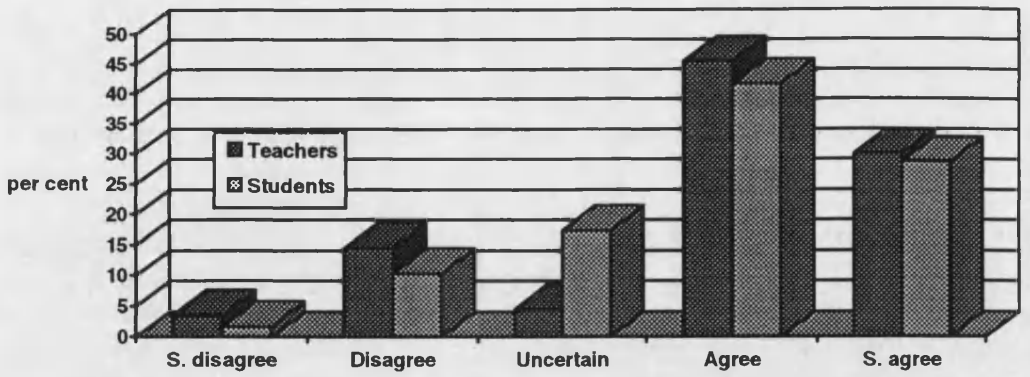


Figure 6.37: *Failure to take into account local needs and workplace requirements in the curriculum.*

Again the responses by teachers and students suggest that an effective educational system from an economic point of view needs to address all aspects of the economy as well as local industrial requirements.

In this part of the questionnaire we tried to highlight those aspects of the educational system which are arguably effective in increasing youth unemployment. However, in this respect significance was tested by using chi-square. The statistical outcomes appear to show very little difference in the attitudes of teachers and students to most of the items investigated (see Table 6.8). However, we can reject the null hypothesis at the 5% level in the majority of cases except in questions number: 16b, 16c, and 16k. Also as it can be seen in Appendix 6.1, male and female attitudes show that their views are mostly similar to the items investigated except in two cases of 16i and 16j.

Questions	Chi-squ	N	DF	Sig. 5%
16.a: The gap between school courses and the needs of work.	1.78	222	4	0.775
b: Lack of appropriate occupational guidance and...	11.19	223	4	0.025
c: Lack of practical and applied knowledge in the....	9.54	225	4	0.049
d: Lack of training and internship for pupils.	2.78	223	4	0.596
e: Lack of emphasis on the significance of work in socio-	4.20	224	4	0.380
f: Lack of opportunity for seeing and understanding the...	1.66	222	4	0.798
g: The failure of school management and teachers to use....	4.49	221	4	0.343
h: Ignoring employer's opinions and suggestions about	4.37	220	4	0.359
i: Insufficient investment in the education-industry...	2.67	225	4	0.615
j: Belief that academic courses are more useful than vocati-	2.94	223	4	0.568
k: Failure to take into account local needs and workplace....	10.71	223	4	0.030

Table 6.8: *Youth Unemployment Educational Causes, Chi-square by group (teacher, student).*

The study revealed that our ill-organised secondary education along with other economic and social problems is contributing to raising the rate of unemployment amongst young people. In this respect, according to respondents, youth unemployment to some extent is the school system's fault because:

- there is a big gap between what students learn at school and what the world of work requires;
- there is no appropriate careers education, occupational guidance and counselling in the school programmes that could motivate and direct students towards suitable choices for their future study and employment;
- there is an unnecessary emphasis on theoretical points and an ill-developed curriculum which ignores basic, applied, and practical knowledge;
- there is no on/off job training and internship for secondary level students;
- no emphasis is given in the school curriculum to the significance of work in socio-economic development;
- there are no opportunities for students to be made aware and to understand the variety of employment choices in society;
- the schools' managers and teachers have failed to use local opportunities concerning links with education and work;
- employers and industrialists have not been involved in transferring their opinions and experiences in the developing of the school curriculum;
- educational officials have ignored sufficient investment in the education-industry relationship;
- it seems that educators and officials believe that academic-based courses are more useful than vocational-based courses; and
- because of a high centrally controlled education, local and regional needs of employment have been ignored.

Overall, a considerable number of both teachers and students in this survey reported that they felt that the current secondary schooling system had failed to prepare students appropriately for working life. These results then indicated that secondary schools with their problems are not capable of giving students any advantage in employment. How then can we now expect that students graduating from such schools will be well prepared to enter the labour market? There seems to be a mismatch here between expectation and the probable reality. However, it seems that the vocationalisation of secondary education is not the only solution for youth unemployment: a way that Iranian policy makers are following now in introducing new secondary education in which vocational education is central. Additionally, the result of studies in many developing countries: by Psacharopoulos (1988) in Tanzania and Columbia, by Chin-Aleong (1988) in Trinidad and Tobago, and by Wright (1988) in Sierra Leone have shown that simply studying vocational-based courses did not necessarily reduce unemployment.

The high rate of unemployment and the shortage of skilled people in the labour force is linked in respondents' minds with the current educational system. A lot of teachers and students believe that the educational system, which still considers the preparation of students to go on to higher education as its main objective, is responsible for these problems. Thus, they see that there is a need for a more effective secondary educational system which is more technically and vocationally oriented and which can cope effectively with the problems with which the present secondary educational system is incapable of dealing.

6.3.5 Youth Preparation For Employment

The fifth area of enquiry concerned using teachers' and students' experiences and views in order to highlight a series of possible approaches which might improve the quality of relations between school and industry. Perhaps, secondary schools with these policies and ways are able to prepare pupils so that they can meet the demands of their future work life more effectively. Therefore in the format of the question of, *"which of the following approaches are appropriate for the preparation of secondary school pupils so they can meet more effectively the demands of their future work life?"*, we introduced a list of statements as possible approaches for improving of the youth preparation programmes which have been presented in figure 6.38 to 6.54.

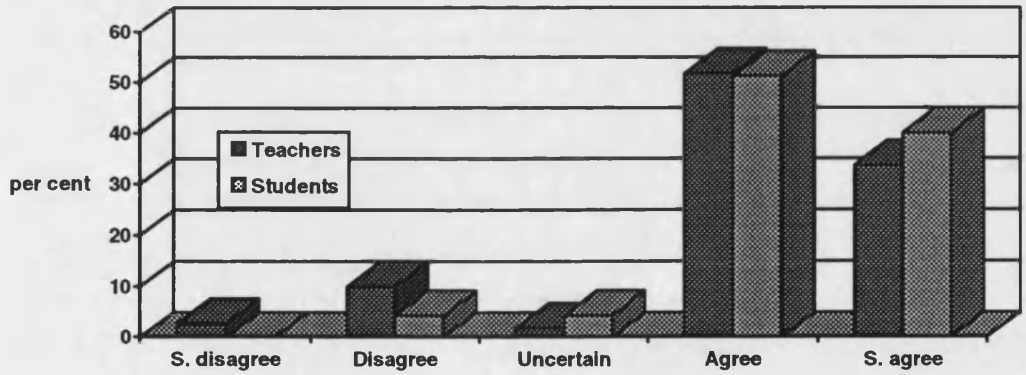


Figure 6.38: *To emphasise the essential values, knowledge and skills relating to work*

Of the teachers' sample, 51.8% agreed and 33.60% strongly agreed with the statement as opposed to 10% who disagreed and 2.7% who strongly disagreed upon the influence of attempts 'to emphasise the essential values, knowledge and skills relating to work' as an effective factor in the preparation of young people for work. Very similar to this group, 51.3% of students disagreed and

40% of them strongly agreed with this statement, while only a small percentage (4.3%) of students disagreed with the above point.

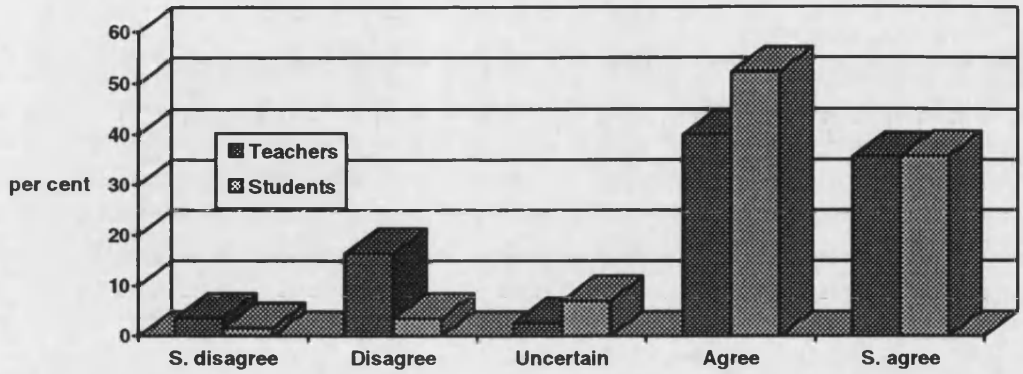


Figure 6.39: *To allocate enough time and resources for introducing with work and its different effects.*

As is shown in Figure 6.39, most of the teachers(76%) and students(88%) agreed positively that any movement to equip young people with appropriate skills and abilities regarding labour market requirements, should be well-supported.

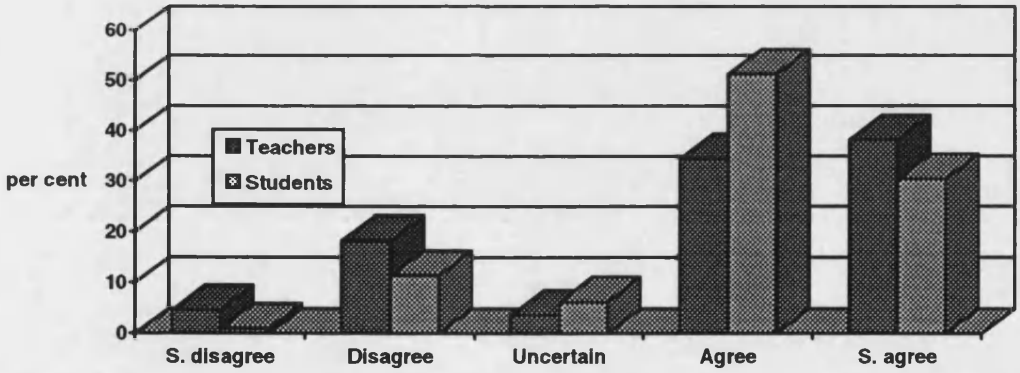


Figure 6.40: *To emphasise training and internship in all courses.*

Of the teachers' sample, 38.2% strongly agreed and 34.5% agreed with the statement as opposed to 18.2% who disagreed and 4.5% who strongly disagreed on emphasising training and internship in all courses as an appropriate approach in the preparation of young people for the world of work. Also 51.3% of students agreed and 30.4% strongly agreed with the above

statement, while, 11.3% disagreed and 0.9% strongly disagreed with this statement *'to emphasise training and internship in all courses'*.

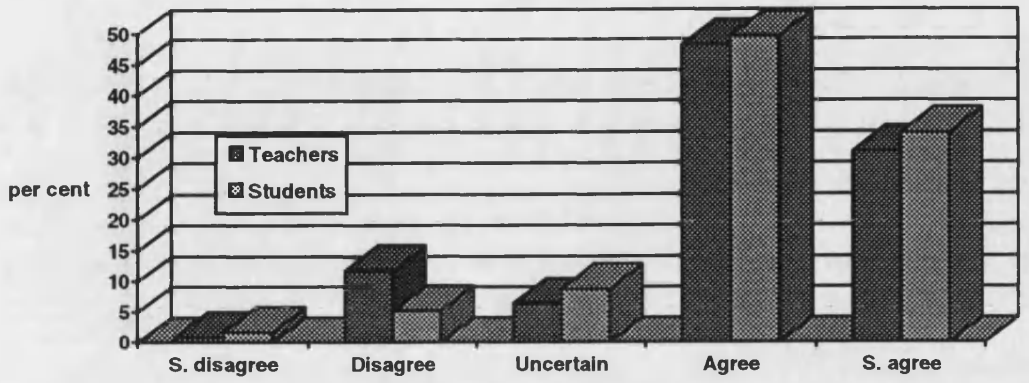


Figure 6.41: *To emphasise flexible and applied skills and knowledge.*

It is very important for a modern economy that education and training systems are able to prepare future workforces to have a range of flexibility in their skills. This ability allows labour force to shift and to change from existing posts easily when technology and consequently the nature of jobs changes. So both teachers and students absolutely agreed with an educational pattern which focuses on flexible and applied skills and knowledge in schools.

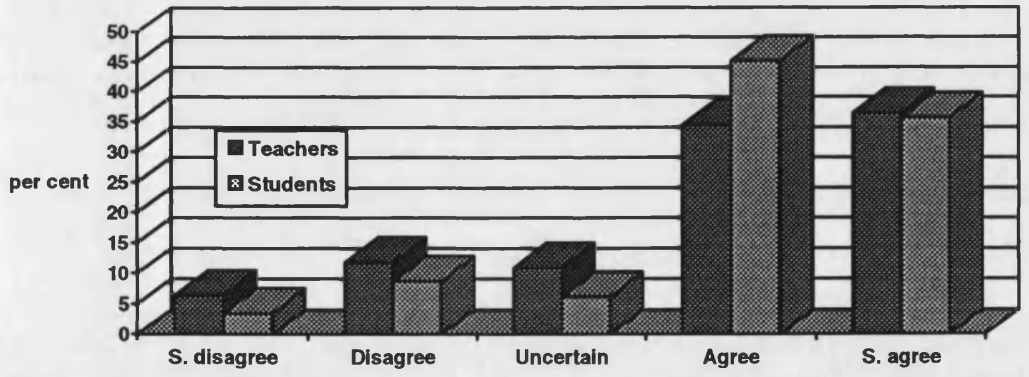


Figure 6.42: *To establish annual exhibitions in various industrial fields where students can learn more about the industry and the jobs it offers.*

Teachers responded to the statement that *'annual exhibitions in various industrial fields where students can learn more about industry and the jobs it offers'* is an essential basis in the preparation of young people for work in strongly agreeing

(36.4%) and agreeing (34.5%). While only 11.8% of them disagreed and 6.4% strongly disagreed with this statement. Similarly, while, 45.2% of students agreed and 35.7% strongly agreed with the above statement, in total only 12% of them disagreed.

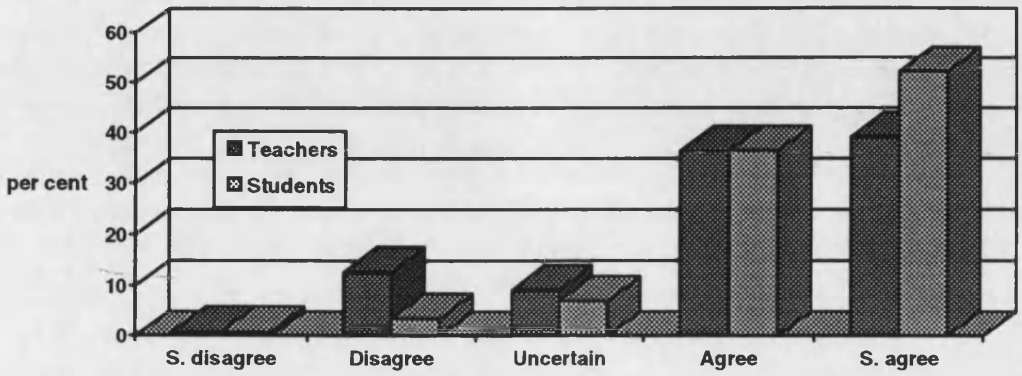


Figure 6.43: *To visit industry and trade centres regularly.*

Observation is a critical way for learning and this is particularly important for young people in terms of finding more information out about occupations, and circumstances of the world of work. What they cannot catch in school even over a long period of time, they will able to see in a real situation. The teachers' response to the statement *'to visit industry and trade centres regularly'* revealed that most strongly agreed (39.1%) and agreed (36.4%) with this statement. This is opposed to 12.7% who disagreed and 0.9% who strongly disagreed on the influence of this factor on the preparation of young people for work. While, 52.2% of students strongly agreed and 36.5% agreed, only 11% of them disagreed with the above statement.

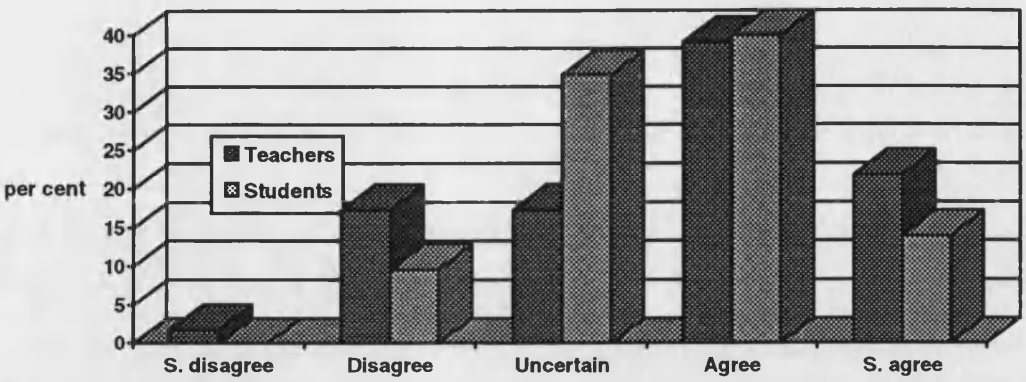


Figure 6.44: *To decentralise curriculum development.*

Most of the teachers responded to the above question positively (62%) that decentralising curriculum development will increase effectiveness and facilitate the preparation of young people for work, while 19% of them disagreed with this statement. Although, 54% of students agreed that to decentralise curriculum planning might be helpful for preparing young people for work, a remarkable percentage of them (35%) were uncertain.

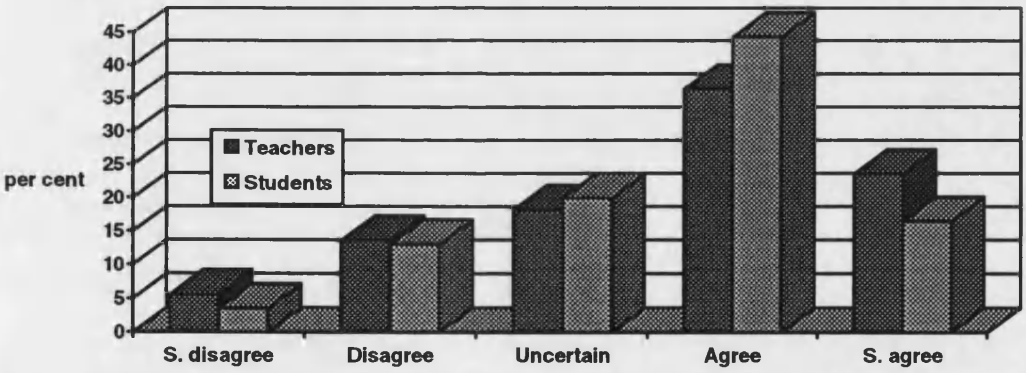


Figure 6.45: *To participate with employers in developing the high school curriculum.*

The majority of teachers (60%) and the majority of students (61%) agreed that the participation of employers in developing the high school curriculum is an important factor to provide a reasonable basis for youth preparation programmes. Workplaces have their own culture and environment with their own specific expectations. Employers will transfer this climate and its

conditions for employing young people to schools, if they are involved in the developing of the school curriculum.

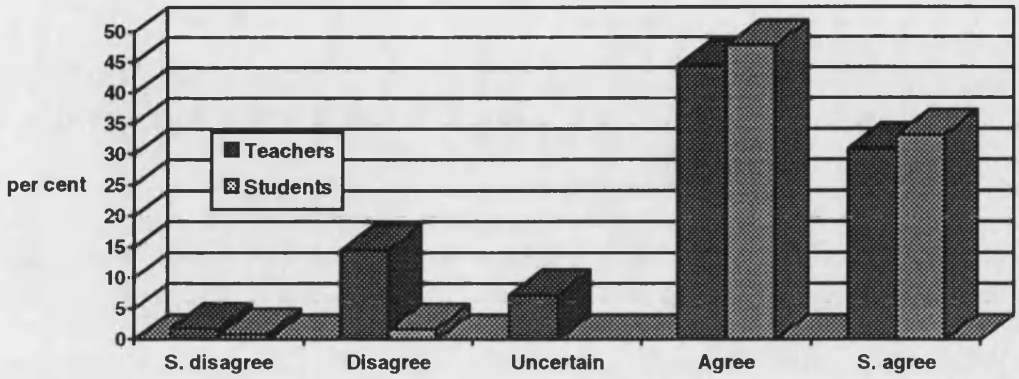


Figure 6.46: *To emphasise team work in school.*

The teachers generally agreed that emphasising team work skills in school will increase employability of young people (30.9% strongly agreed and 44.5% agreed with the statement), while about 15% of them disagreed with this point. Over 81% of students agreed that team work skills in school should be emphasised, with only a small number of students (7%) disagreeing with this statement.

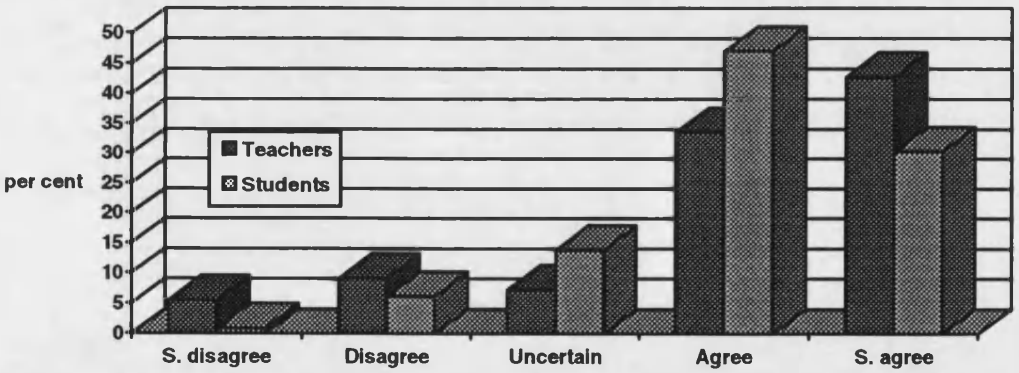


Figure 6.47: *To providing suitable opportunities for teachers in order to introduce with workplace situations.*

It is clear that teachers need a realistic concept of the world of work, if they want to play a better role in the learning process. As can be seen from Figure 6.47, teachers and students responded to this question positively by agreeing that it is necessary that teachers attend in the workplace.

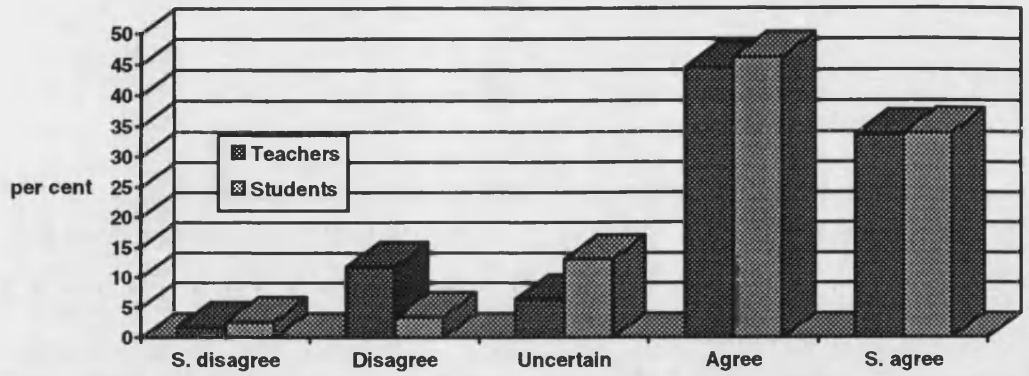


Figure 6.48: *To facilitate relations between school and other institutions by reforming management systems.*

Again most of the teachers (79%) and students (80%) agreed that educational management systems need to be reformulated to facilitate the relations between schools and other institutions.

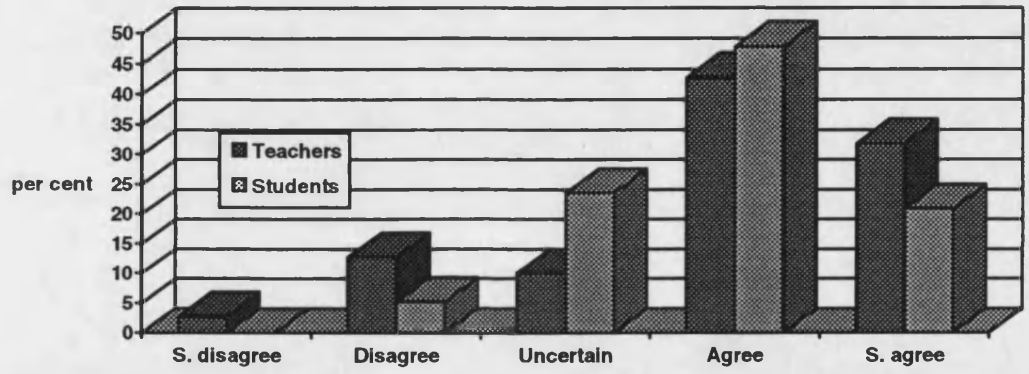


Figure 6.49: *To emphasise quality management for developing approaches in these fields.*

Of the teachers' sample, 31.8% strongly agreed and 42.7% agreed that improving existing means and approaches concerning links between schools and the workplace is an important factor for youth preparation programmes. This is opposed to 12.7% who disagreed, and 2.7% who strongly disagreed with the above statement. Similarly while students' response to the above statement indicated clearly that most agreed (47.8%) and strongly agreed (20.9%) with this statement, only 5.2% of them disagreed.

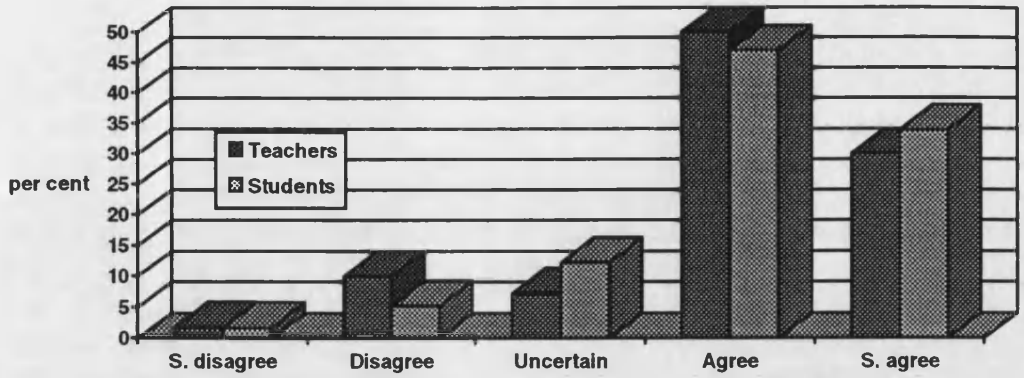


Figure 6.50: *To evaluate the curriculum in order to continuously improve goals and standards.*

The teachers' response to the notion of *'evaluating the school curriculum in order to improve goals and standards'* showed that most of them agreed (50%) and strongly agreed (30.9%) with this statement which is opposed to only 10% who disagreed and 1.8% who strongly disagreed.

Students' response to the above statement also indicated a similar result where 47% of students agreed and 33.9% of them strongly agreed, while a small number of them (7%) disagreed that there is any relationship between evaluation of the school curriculum and the youth preparation for work.

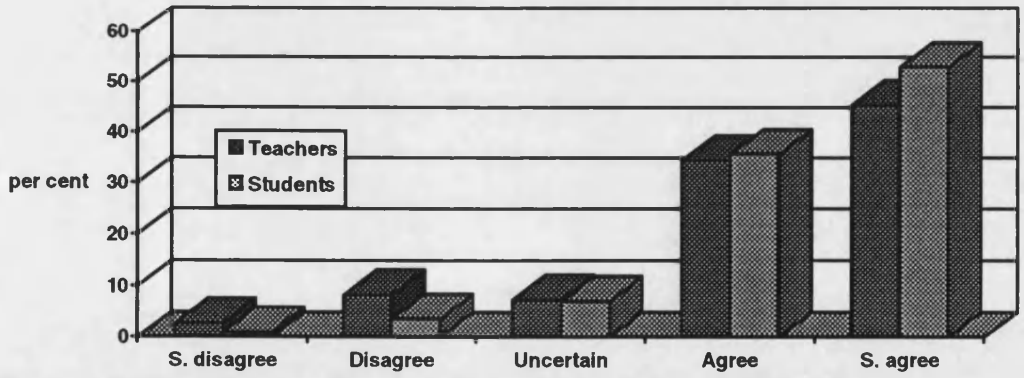


Figure 6.51: *To use educational technology: TV, video, in teaching practical subjects.*

The responses of the teachers' and students' sample indicated that educational technology can be considered an effective factor in teaching practical subjects. This is particularly important when schools are unable to find a real situation to use for any reason.

When teachers and students were asked if using occupational guidance and consulting services in school affects the preparation of young people for employment, over 78% of teachers and 86% of students said Yes, and 15.% of the teachers and 5% of students said No.

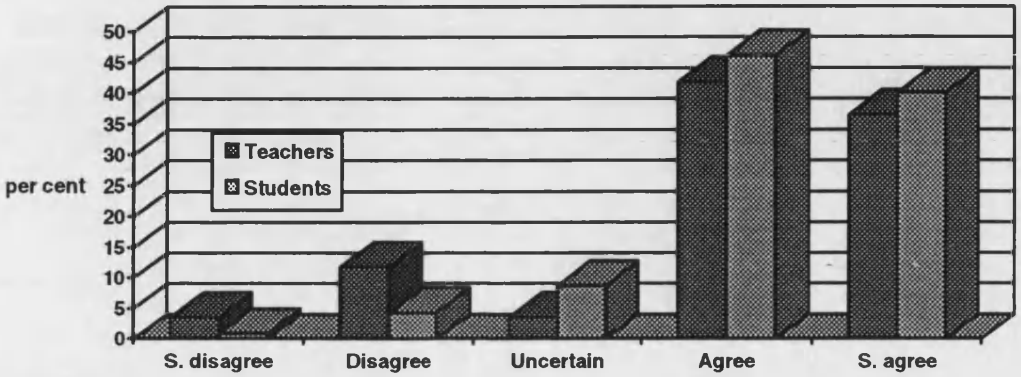


Figure 6.52: *To use occupational guidance and consulting services in school.*

This would indicate a strong support for policy makers that try to address this very important element in educational and training systems.

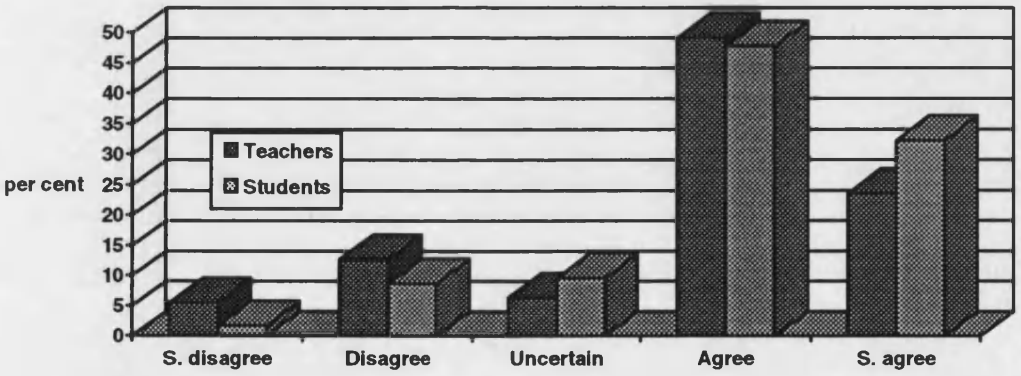


Figure 6.53: *To emphasise careers education.*

In order to improve employability of the young people, an emphasis on careers education in the high school curriculum has been confirmed by the majority of teachers (78%) and the majority of students (72%) as opposed to only 17% of teachers and 14% of students who disagreed with this idea.

When both teachers and students were asked if the establishment of a special 'office of partnership with industry' in schools was required, the majority of teachers (73%) and the majority of students (80%) agreed.

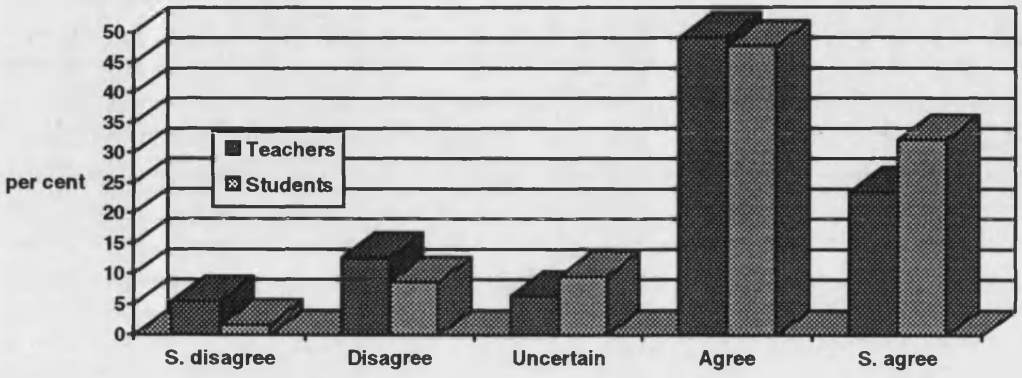


Figure 6.54: *To establish the office of partnership with industry in schools*

This would suggest that this unit in a secondary school could be a facilitator and regulator for the school-industry links in terms of preparing young people for their future employment.

Table 6.9 presents the results of significance tests for questions in this section by using chi-square. There appear to be very little difference in the attitudes of either teachers and students to most of the items investigated (see Table 6.9). However, we can reject the null hypothesis at the 5% level in the majority of cases except in questions number 17b, 17c, and 17g. The result of the same test regarding male and female attitudes concerning these items show that there is no significant difference between their views (Appendix 6.1). Therefore, it would suggest that teachers and students feel similarly about effective factors, policies and methods which when applied in a well-structured secondary education, would maximise young people's chances for employment.

Questions	Chi-squ	N	DF	Sig. 5%
17.a: To emphasis the essential values, knowledge and skills..	8.69	225	4	0.069
b: To allocate enough time and resources for introducing...	14.98	223	4	0.005
c: To emphasis training and internship in all courses.	10.30	224	4	0.036
d: To emphasis flexible and applied skills and knowledge.	3.84	222	4	0.428
e: To establish annual exhibitions in various industrial....	4.68	224	4	0.322
f: To visit industry and trade centres regularly.	8.75	223	4	0.068
g: To decentralise curriculum development.	14.12	220	4	0.007
h: To participate with employers in developing the high....	5.49	219	4	0.241
j: To emphasis team work in school.	3.14	222	4	0.535
k: To providing suitable opportunities for teachers to....	0.218	221	4	0.995
l: To facilitate relations between school and other....	7.45	222	4	0.114
m: To emphasis quality management for developing....	4.44	222	4	0.349
n: To evaluate the curriculum in order to continuously....	4.08	225	4	0.394
o: To use educational technology: TV, video, in teaching	1.62	223	4	0.805
p: To use occupational guidance and consulting services...	3.72	222	4	0.445
q: To emphasis careers education.	5.16	225	4	0.272
r: To establish the office of partnership with industry in....	1.89	222	4	0.756
s: To emphasis individual/social responsibilities.	1.81	224	4	0.770

Table 6.9: *Youth Employment Preparation's Elements, chi-square by group (teacher, student).*

However, this finding indicates that in order to close the gap between education and the economy in the country a range of fundamental changes in both policy and practice is required. Any new educational system requires not only supportive policies, but also the developing and provision of appropriate staff, materials, and facilities. Therefore, it needs considerable effort to reform the current educational system in the right way. In order to develop basic and required circumstances it needs big funds. Surely, these changes will lead to better conditions regarding the situation of young people in society including:

- preparing them for a job directly after secondary school;
- helping them get a job in the future;
- providing them with good learning experiences and opportunities;
- helping them to be better qualified for a career;
- preparing them for self-employment.

To what extent will these expectations be fulfilled? The many problems in the country's secondary schools which hinder those schools from achieving their objectives have been stated by different writers. For example, Shokohi (1995)

stated that there has been a shortage of equipment and other facilities in the country's secondary schools. Hossaini Nasab (1995) considered that the existing school curriculum was unsuitable as a preparation of students for the world of work because it had not been designed to meet either local community or national needs. MERC (1994) discussed the lack of proper libraries, laboratories, workshops and other facilities.

Responses to statements about youth employment preparation highlighted the most important required educational changes for the improvement of these programmes for school leavers' future employment which are as follows:

- to emphasise essential values, knowledge and skills relating to work;
- to allocate enough time and resources for introducing work and its different effects;
- to emphasise training and internship in all courses;
- to emphasise flexible and applied skills and knowledge;
- to establish annual exhibitions in various industrial fields where students can learn more about the industry and the jobs it offers;
- to visit industry and trade centres regularly;
- to decentralise curriculum development;
- to participate with employers in developing the high school curriculum;
- to emphasise team work in school;
- to provide suitable opportunities for teachers to introduce workplace situations;
- to facilitate relations between school and other institutions by reforming management systems;
- to emphasise quality management for developing approaches in these fields;
- to evaluate the curriculum in order to continuously improve goals and standards;

- to use educational technology: TV, video, in teaching practical subjects;
- to use occupational guidance and consulting services in school;
- to emphasise careers education;
- to establish the office of partnership with industry in schools.

However, the efforts of the government since 1991 to implement the new form of secondary education, and the continuous discussions aimed at increasing the enrolment of students onto TVE curricula to 50% of those in secondary education, and the expectations of a positive change in this field has possibly had some effect on students' views of TVE which has resulted in a new record in students' enrolment in 1996/97 in TVE courses -about 589,000 compared with about 222,000 in the previous year (ME, 1996). Students are thus living and studying in an atmosphere where a positive promotion of TVE is occurring.

Secondary school teachers' and students' very positive views of vocationally-based courses and their responses in this research reflect their dissatisfaction with the current educational system which they clearly consider responsible for a lot of problems facing society today. They reported that they see the system as unsuitable for the country's national development needs. They criticised the education system, believing that it contributes to the high rate of unemployment among secondary school leavers. Hence, there is a great need for more TVE in Iran at this time to prepare students for gainful employment. If the curriculum at the secondary school level becomes more technically and

vocationally oriented, students will be better prepared for higher education and work.

Additionally, teachers and students in this study feel that this new approach is likely to contribute to the economic development of the country by supplying the labour market with well trained people and by coping with technological advancement in Iranian society. This result supports Chrosciel (1989) who stated that the supply of well-trained and skilled human resources is an essential requirement for economic and industrial development. As noted earlier, this is necessary but, of itself, insufficient. Such supply without jobs and careers afterwards which can fully utilise such technological skills, will be equally problematic.

According to the educational Acts of 1991 making the secondary school curriculum more vocationally and technologically oriented will contribute to the economic development of the country. The extent of technological change in Iranian society is one of the main reasons for offering TVE courses at secondary school level.

The finding that both teachers and students viewed vocationally-based courses positively supported recent studies carried out by Slamet (1987) who investigated the attitudes of senior high school students and their parents towards vocational education in Yogyakarta (Indonesia); Akintode (1988) who conducted a study to investigate the attitudes of secondary school students towards TVE in Lagos State (Nigeria); and Shuhil (1990) who conducted a

study to investigate the attitudes held by vocational school administrators, teachers and students in the United Arab Emirates (UAE).

Summary

Most teachers and students have agreed that Iranian secondary education is struggling with the following major weakness in its policies, structure, and practices:

- although the school curriculum presents a wide and heavy range of subjects in the school programme for different secondary high school paths (see Chapter two), but students are not prepared in the essential skills and abilities to meet the labour markets needs (see Figures 6.1 to 6.6). Indeed, the school curriculum includes most of the essential subjects which a modern economy needs, but it needs to be rearranged and represented in an appropriate way. If curriculum planners reorder and restructure the current materials and subject, they would be equiping students with the required skills for employment.

- while it has been recognised that involving industrialists in designing the school curriculum is essential, and education should reasonably be linked to industry, the results show that curriculum policy makers have ignored the employers' role in the development of the current school curriculum. Additionally, because of a highly centralised system, the schooling system is not sensitive to the local employment requirements and needs.

- while most stakeholders such as teachers, students, parents, and school governors believe that a mixed curriculum (which counterbalances practical and academic subjects) will maximise youth employment chances, secondary education is still a highly academically-based system. In addition, most teachers and students describe the school curriculum as an ineffective system which does not take into account the future employment needs of pupils; it is not adequately resourced; its elements are not sufficiently integrated; it does not emphasise the world of work sufficiently; and its practical elements are not taught in conjunction with local industry.

- no connection can be found between the teaching methods used in the school curriculum and the employment prospects of pupils, while a work-related education requires a work-related teaching approach. Also, there is no sign of any other effective service which would maximise pupils opportunities for employment in the school programme such as careers education and guidance.

Teachers and students in this research believed the current secondary education with a such problematic structure is some how responsible for youth unemployment in Iran, but policy makers by numbers of ways can correct this system so that the preparation of young people for the world of work and maximising employment chances are its central aims.

6.4 Educational Policy Makers' Views on Education-Economy Links

Educational policy makers have a key role in educational systems, in particular, in those systems which are centrally organised, for example the educational system in Iran. These people have traditionally been responsible for making decisions or taking actions nationally or locally. Therefore, it is supposed that they know better and more about the schooling system and its weaknesses and strengths. For this reason, policy makers have been considered as an important source to find out more information about *what they think about education and economy relations in Iran, how they try to bring these two systems closer, and how they might reform education in this respect.*

6.4.1 The Education And Economy Relations

The first area of enquiry was about philosophies or reasons which formed the basis for policy makers, educational reforms towards linking secondary education to the economy in Iran. So as a first step they were asked why they thought that education should be linked to the economy. In presenting policy makers' views, I have for the most part combined their opinions; on specific occasions I have quoted their views directly.

There is no doubt about the importance of linking education and economic systems in the modern world. Both educational and economic systems are important elements that contribute towards national growth and development. These factors also have considerable interaction with each other in the process of improving and developing. For example, an improved educational system could respond effectively to a developed economy's needs. However, social,

cultural and educational development is unavoidable when a society achieves economic growth and development. In other words, a co-ordination between the education and economic systems leads to more economic development and also it has a range of benefits for the educational system too.

According to policy makers' views, the linking of secondary education's policy and practice to the economic system is essential because:

> "It not only enables the educational system to prepare young people according to economic requirements, but also changes the direction of education at this level toward the world of work rather than higher education." (Ed-p 1).
>
> "By highlighting the roles and values of 'working' and emphasising it, this process enables the educational system to influence parents' and young people's attitudes to working life. The logical result of the education-economy links will be seen in the raising of students' understanding of economic and industrial working" (Ed-p 2).
>
> "It helps educational policy makers to make long-term decisions that are consistent with national economic and social development plans" (Ed-p 3)
> "With a regular exchanging of views between two sides, educational policy makers would be able to have continuous and immediate feedback from all sections of the economy: industry, business, ..." (Ed-p 4).
>
> "Linking education with the industrial and economic sectors, particularly in developing countries which still have a lot of vacant jobs for skilled people, can lead to an increase in the rate of youth employment" (Ed-p 5)
>
> "This links allows students to learn those skills and abilities which can benefit them when they enter the labour market. One of the big problems that school leavers face after school is that they know nothing about work and they should go to private training agencies to train them in the necessary skills in a specific field" (Ed-p 6).
>
> "When young people are aware about the range of available careers, they may understand better what their future' life looks like, so making a satisfactory decision about their choice is possible" (Ed-p 7)
>
> This is a possible way for teachers to update their teaching and learning strategies and address new techniques, changes and experiences in the related fields. However, industrial expertise experiences can benefit the learning process" (Ed-p 8).

> This is a economic way of using scarce resources. It is possible for economic and education system to pool their resources for mutual benefit in some circumstances" (Ed-p 12).

In the second step policy makers were asked to what extent they thought the system of education in Iran is or should be congruent or planned to fit with the economic system. This question compared two different eras: the current educational system which has been established since 1970 and the new one which is now in its fifth experimental year and covers one-third of the secondary students in the current academic year.

The national intention has been concentrated on co-ordinating all aspects of economy and education when the first mid-term Development Plan in 1949 began. During these plans, policy makers and planners tried to improve co-ordination between all the different sectors and activities of society in order to achieve the development aims. The new Islamic government in 1979 tried to focus on the relationship between the education and economic system because at that time secondary education was the main source for skilled people. For the government, reforming the system of education, which was then largely based on the western educational systems, was the first priority.

By the time of the Cultural Revolution in 1980, which led to the closing of universities and higher education institutions, the Ministry of Education was ordered to fundamentally reform the educational system. An emphasis on a skilled workforce for the industrial growth of Iran was one of the important aims of the reform. But the reform of the educational system was postponed mostly because of the conflict between Iran and Iraq in 1980.

However, two noticeable aims underpinned the guidelines for the reformed educational system which was launched finally in 1991: firstly, *conformity with the economic policies* which were aimed at self-sufficiency and economic independence by preparing skilled young people for the world of work. And secondly, *reducing social pressures* because of increasing youth unemployment mostly after finishing of the Iran and Iraq war. When young people came back from the war, their simplest need was to have a job, since they were unskilled and unprepared for the world of work and adult life. The current educational system has failed to prepare young people for employment on the one hand, and to adapt to a changing economy on the other.

> "The current system has not been linked to industry at all because it has been established to prepare all students for higher education. So a strong emphasis on theoretical knowledge is one of the main characteristics of this system....While in the reformed system we have set up another branch in the secondary schools (Kar Danesh) which gives a good range of careers education choices. This branch will take into account the previous experience of students from out of school as a part of schools' courses. I think the essence of our educational reform can be concluded in this branch " (Ed-p2).

> "It seems that the high drop-out amongst students is a result of insufficient relations between education and industry.... In the new schooling method we have not only added more practical and applied sessions which need an active participation in class, but by developing work experience scheme for students in vocationally-based courses school-industry links will be emphasised (Ed-p 5).

> "The central development of the school curriculum and the ignoring of regional employment needs has led to an unequal opportunity for students from different areas. So as a policy for the second socio-economic development plan (1995-2000), educational policy makers have to emphasise the decentralising of educational approaches" (Ed-p 7).

> "Insufficient investment in technical and vocational education and not equipping it, has presented this kind of education as a poor and low education which is a major reason for negative attitudes amongst students and parents to TVE in our society. Although in the new system changing of the parents' attitudes has been considered as a very important factor to reach to our goals. The development of technical and vocational education has a

> specific place among those policies, but parents have not responded positively to changes which have taken place in the system yet" (Ed-p 8).
>
> "the lack of co-ordination between different ministries in giving a unique policy in terms of preparing required human resources, and not justifying the economic aims for the educational policy makers is leading to inappropriate relationships between the education and industrial sectors" (Ed-p 10).
>
> "In fact, this matter of why we give a kind of education to students which prepares them for higher education was a big question for policy makers, while our universities are unable to offer places to the majority of them but also our economy needs intermediate skilled workers more than higher educated people....Thus a new secondary education which has built up after an intensive study, emphasises technical and vocational education strongly to make secondary education a balanced system" (Ed-p 1).

Therefore, educational policies are directed towards changing the existing structure of education in terms of having a close co-operation with the economy. An important dimension of this process is improving the ratio of technical and vocational education in comparison to academic courses, from approximately 10:90 at the secondary level in 1994 to 50:50 by the end of the second five-year plan in 2000 (ME, 1995). This was considered as a workable solution for improving the connection between education and industry and involving country's economy in the learning process.

6.4.2 Models And Policies

The second area of enquiry was finding out upon what the country's educational policies and models on which educational reforms are based. Have policy makers followed other countries experiences or not? If so which country(ies), why, and how?

For policy makers, concentrating on two issues as central points in their policies was very important: the development of technology and improving the quality of human resources.

Educational reform in the country has focused on two major purposes: it aims not only to reduce high unemployment amongst school leavers but also to improve the educational system's relations with the changing Iranian economy by providing school leavers with appropriate skills and knowledge, a purpose that the current educational system has not been able to embrace. Policy makers have highlighted the following reasons for this failure:

- A strong emphasis on the preparation of students for higher education (Ed-p 1);
- The lack of social status in technical and vocational education compared to liberal education (Ed-p 3);
- The lack of or active relationship between education and the labour market (Ed-p4);
- The neglect of local and regional requirements in a high centralised and controlled education system (Ed-p 8); and
- A depressed economic system which the government has not been able to reform completely. This system will soon change to an open market, while the educational system is still centrally controlled (Ed-p 11).

However, reviewing other countries' educational experiences, studies , and models was a strategic policy for educational policy makers which would be able re-orientate policies. In order to deliver this aim, a committee including policy makers and educators in different fields were ordered to visit selective countries which included Japan, Australia, England, Germany, India, South Korea and Sweden between 1988-90.

As a result, after a reviewing these countries' educational systems and models, the committee recommended the Ministry of Education to follow and use some

of these countries' experience in the reforming of the country's secondary schooling system as follows:

Firstly, for technical and vocational education the committee recommended the German (Dual System) as a first priority and the Australian system as a second. Based on this report and other internal studies, policy makers have therefore introduced two models of technical and vocational education. Most of the policy makers believed that the dual system in Germany is the best model for Iran to focus on in its vocationally-based courses. When asked the reason for this, the following answer was given:

> The dual system in Germany with about 70 years experience has been considered as a powerful model among all existing models and traditions which try to link education to workplace. This model has provided a balanced and reasonable relationship between education and industry in Germany which has increased a strong commitment concerning the responsibilities of both educational and economic systems. Good co-operation between these sectors has resulted in a high quality labour force which we can see by analysing the very successful economy in Germany after the second world war.... Also in Australia, a flexible model for technical and vocational education has been created which we have used as a guideline in designing training courses and schemes. Emphasis on core skills like problem solving, decision making and team working is noticeable in these systems....But I should say we have tackled this creatively. For example, we have established our new vocational branch -Kar Danesh- it in a way which you cannot find either in the German or in Australian models. In this model we accept pupils' experience and skills and proficiencies which have been learnt out of school as a part of the school's programme, if pupils can pass the relevant exam and reach standard levels. So we think this system with these characteristics can attract parents' and pupils' attentions to vocational education positively" (Ed-p 1).

Secondly, for the academic courses of most general high schools, policy makers have introduced the credit system which changes year long courses to modularised sessions (semester or term). For this model which emphasises academic abilities, the Japanese system has been followed.

> "One of the most serious problems in the present system is the increasing rate of drop out amongst students and their failure in school. According to research outcomes, the method of schooling is the main cause of the problem. Because in many cases when students fail to pass only one or two exams, when they have passed the majority of sessions, they have to repeat the whole course in the next year. That is very difficult particularly for teenagers who stay in the same class where they were last year. Contrary to year-long method, in the credit system if a student fails in one session, he or she repeats only that lesson. Therefore, with this approach we can save a lot of money, time, and our resources on the one hand, and reduce the high rate of drop out amongst pupils on the other. Also, it is possible to arrange the whole secondary schools last three years, while the length of the current system is four years. This will give a good opportunity -one year- particularly for boys to follow a suitable training course and skills themselves before they go into the armed services" (Ed-p 2).

Thirdly, for pre-university courses, the English Advanced Courses ('A' level) have been taken as an appropriate model. While, in the new system the period of studying in the secondary schools has been cut to three years, most highly ranked pupils are able to attend a one-year pre-university courses as an introduction to higher education.

> "We believe that this may help students to be familiar with the ways of studying at university, prepare them with more related and specific knowledge and ability which is required for higher education levels. And also these courses can reduce the gap between new secondary education which is more general and university level which is more professional. This is an opportunity to direct intelligent students towards higher education.

6.4.3 Employers' Involvement In Curriculum Development

The third area of enquiry looked at how policy makers try to involve economic and business experts and employers in order to encompass their views and experiences in the secondary school curriculum regarding required workforces.

Also investigated was the question of how systems of education analyse the requirements of the labour market (required skills), and how the educational policy makers intend to cover them in school programmes?

According to the majority of policy makers it was common that:

> "Educators and policy makers should have clear answers to those questions regarding what kind of education and skills are required by the labour market, and which organisations or sectors are responsible for providing these education and skills. Thus the contribution of industrialists and employers in the re-examination of the educational policies was essential for us " (Ed-p 1).

It was commonly agreed that the following tasks can assist curriculum planners in having a clear understanding of employment situations, their requirements and the complexity of the workplace:

- workplace observations;
- analysis of jobs and their needs;
- review of employers' attitudes;
- review of employees' experiences;
- review of what is going in the real process of work: the level of technology and the level of required knowledge and competencies.

The outcomes of these processes finally led to the introduction of a *'Job Analysis Model'* (competencies) for producing curriculum materials for vocationally-based courses. For finding out what a job looks like according to this model and which sort of educational programme will accommodate it, curriculum planners need to analyse and describe the nature of jobs by taking the following steps:

a: determine the present and future needs of jobs;
b: find out and group all available jobs in society;
c: select a range of jobs on which to focus in educational materials, since the educational system can not address all existing jobs. Some criteria such as the range of jobs in each group, the lack of resources and facilities and the social and economic priorities;

d: analyse a group of jobs in order to find out 'job descriptions' or pieces of work (i.e. tasks);

e: determine a reasonable range of behavioural objectives which can guide the curriculum planners to develop appropriate textbooks for any one of these groups of jobs (see Figure 6.55).

Pupils after taking these sessions successfully, can be assumed to be skilled workers.

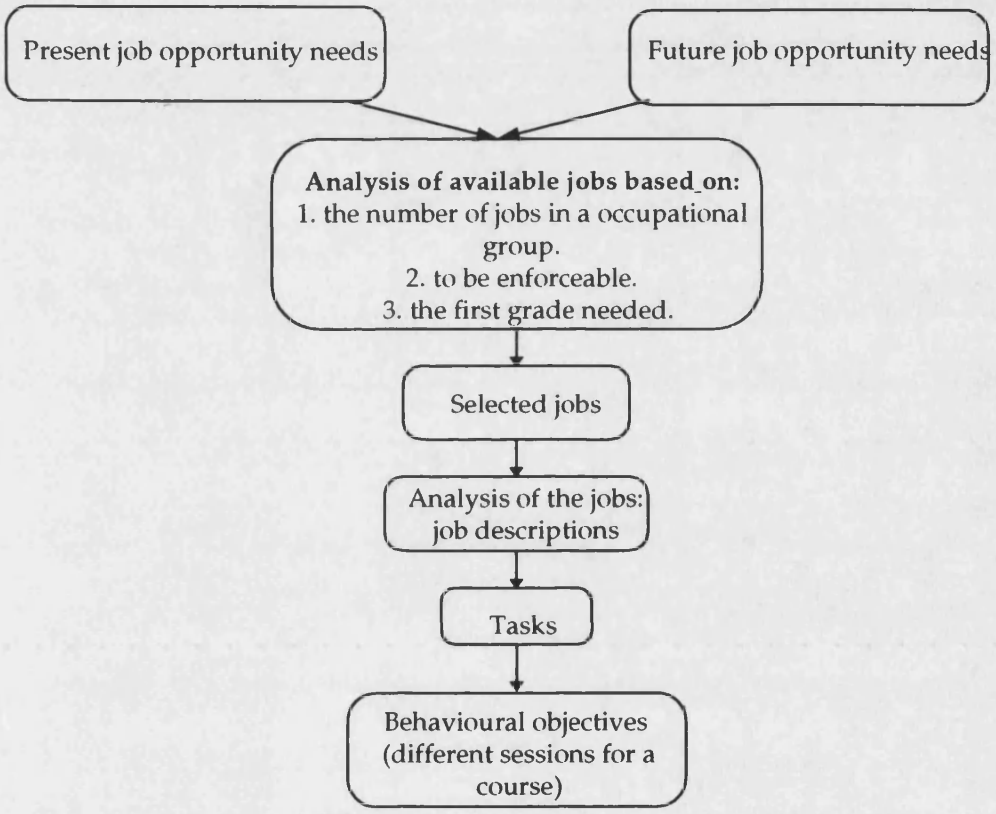


Figure 6.55: *Competence Model: the process of analysing the labour market needs in the Education Acts 1991.*

6.4.4 The Future Of Reformed Education

In the final area of enquiry policy makers were asked to what extent they thought that the outcomes of the educational reforms cover the national aims to link education to the economy? Which factors will affect the expected results

from the new educational system in terms of preparing school leavers for the world of work?

> "Basically, any change and reform in any aspect of human life requires some conditions which assures it reaching the missions of reform" (Ed-p 5). "If a government wants to reach all the predicted aims of educational reform, it should develop all the required conditions" (Ed-p 6).

The most important requirements for running this system successfully according to policy makers are as follows:

1. we need to improve the co-operation between the educational system and all the related organisations which are consumers of skilled people (Ed-p 6);
2. any changes require care; the required conditions, resources and facilities need to be provided(Ed-p 5);
3. the government should develop some policies in terms of encouraging those industrial managers who demonstrate positive co-operation with education in order to keep this in place (Ed-p 8);
4. increasing and continuing investment in education particularly, in technical and vocational education (Ed-p 6);
5. we have to improve the flexibility of the school curriculum and keep it updated as regards economic and industrial development (Ed-p 3);
6. an effective vocational education must be supported by running regular workshops for different fields and courses (Ed-p 11);
7. expanding and developing the short-term technical and vocational courses (Ed-p 2);
8. we are developing a policy in which priority in offering jobs will be given to those students who have got skill qualifications and who have completed their courses successfully (Ed-p 1);
9. it is important to pay attention to the geographical and regional differences in educational planning (Ed-p 12); and
10. providing a range of continuous programmes for improving parents' attitudes towards technical and vocational education (Ed-p 8).
11. "At this point in time there have been no graduates from the reformed system so we cannot judge its success" (Ed-p 7). "Up to now the system (the structure, policy, and curriculum) have been evaluated three times. The results of such evaluations indicate a gradual improvement of the quality of the new system" (Ed-p6).

Although, Generally policy makers demonstrated a positive view of the new educational system and they highlighted some advantages of this educational change in comparison to the present secondary schooling system (Table 6.10),

some of them are still worried and are not sure that the Iranian educational and economic systems can be dovetailed together.

• *New System*	• *Present System*
• ***attention to the employment of young people after school.***	• emphasis on preparation of all students for higher education.
• ***emphasis on the vocationalisation of education.***	• strong emphasis on theoretical knowledge.
• ***emphasis on academic and careers guidance and counselling in schools.***	• high drop out amongst students.
• ***emphasis on the appropriateness of the school curriculum for the conditions of small regions and rural areas.***	• the lack of equal opportunity for students from different areas.
• ***emphasis on adaptability and flexibility of educational system towards new economic situations.***	• the lack of economic justification of educational policies.
• ***emphasis on co-ordination of TVE with short-term training courses and professional training by the other organisations.***	• The lack of co-ordination between different ministries in preparing required human resources.
• ***emphasis on creativity and problem solving.***	• emphasis on routine and traditional approaches.
• ***emphasis on improving the status of TVE in society; parents.***	• the lack of investment in TVE which causes negative attitudes towards TVE in society.

Table 6.10: *Comparison between the reformed and the current educational system.*

The Ministry of Education is still faced with some problems where officials need to try to find appropriate solutions. Problems which may perhaps affect the efficiency of the reformed secondary education include:

> "Although we have stressed the role of careers education and guidance as necessary elements for succeeding in the new secondary system, we have not developed a workable guidance programme in secondary schools" (Ed-p 8).

> "The social position of TVE is worrying, parents still decide for their children where and in what field or subject they should study" (Ed-p 9).

> "The economic system in Iran has not settled down yet because of the revolution and war, and the Ministry of Education can still call upon a certain relationship between its policies and that system" (Ed-p 7).

> "Iranian industries and companies have still not reached the point where they believe that education (learning & training) should be considered as one of the crucial stages in the process of production" (Ed-p 5).

> "Workplaces (labour market especially in the private sector) have not sufficient motivation to educate and train human resources because of the high costs involved" (Ed-p 5).

Summary

The opinions of senior officials at the Ministry of Education about the relationship between education and the economy in general and preparing secondary school's pupils for the world of work in particular are remarkable. Their views indicate an awareness about the necessity of education and the economy links and positive attitudes to correct this process. But it seems because of the country's major socio-political problems such as eight years destructive war with Iraq, international tensions mostly with western countries, economic sanctions and other internal crises, they have been unable to reform the educational system effectively. Introducing the Education Acts 1991 after several years study, and comparing international systems, therefore means that the government has given education a top priority.

In order to reform the country's educational system two aims were considered necessary: conformity with the economic policies and consideration to the social needs for education. These two aims forced officials to focus on a model of secondary education with the preparation of young people for the world of work as its central aim. They have realised that the current secondary education which prepares students for higher education, ignores technical and vocational education, lacks an effective relationship with the labour market, is controlled centrally and neglects local and regional requirements, cannot respond to the needs of the economy and society in modern age of Iran. Thus

in order to correct these weaknesses and based on other countries' experiences such as Germany, Australia, Japan, and England the government introduced a new system for secondary education which is gradually going to replace the current system. In this system more attention will be given to technical and vocational education and which aims to counterbalance practical and academic courses at this level. Although officials are optimistic with the recent reforms judgement about the effectiveness of this system remains.

6.5 Employers' Views On School And Industry Relationship

New circumstances concerned with education-industry links in the most modern societies have led to the highlighting of the crucial role of industrialists and employers in terms of restructuring the schooling system towards economic needs. Arguing about how schools should prepare pupils for the world of work without involving employers and industrialists in this process is meaningless. Employers need to be concerned as they are the main "consumers" of school leavers. Perhaps, this is the main reason behind increasing business-education partnerships and projects in all industrial countries. It is thus important for this research which focuses on the relationship between education and industry in Iran, to explore what industrialists and employers think about the current secondary system, to what extent they are satisfied, what are their needs in terms of skilled people, and how would they help schools in the preparation of young people for the world of work.

6.5.1 School And Industry Co-operation

The first area of enquiry dealt with employers' views of the role of education in terms of economic and industrial efficiency. Therefore, as a first question, employers were asked to what extent they thought co-operation between the school system and industries was necessary for better preparation of students for the world of work and why. The views of industrialists were mostly similar in this respect.

> "I think the most important factor in the production process is manpower. The best technological machinery and equipment will not have desired results and efficiency, if it is not directed and used by well-prepared and well-trained people....Well-prepared workforces are those who have a sufficient range of practical and academic skills and abilities" (Employer 1).

> "Altogether, it seems that the school system has not been established according to the circumstances of the economic system and its development plans" (Employer 2).

> "Economic development plans are crucial for directing society towards better conditions in life. In order to carry out these projects, we desperately need skilled and qualified people.... In other words, these people should be familiar with present and future economic needs, they should be creative and be educated and thoughtful" (Employer 2).

> "Education must prepare young people in such a way that they are able to work in laboratories, to drive tractors, to work with equipment and such like. It should not just be preparing them for office (clerical) jobs, in the way that education does now" (Employer 3).

The role of the educational system in the preparation of young people for adult and for life at work is essential. The following case in Ahawaz Steel Company will be helpful in clarifying the role of education and human resources in economic productivity:

> " When we reviewed our production process in recent years, we found that a few years ago our production increased by about 20-25 per cent per year. It was unbelievable, because we hadn't added any extra and new equipment and machine, we hadn't used any new technology or new lines. And also we had used the same material which had been used already. Indeed, the only factor which had changed from a quality point of view, was the workforce.

> During that specific period we had had a few training schemes both 'off and on the job training'. Also we had increased the period of training from 20 hours to 30-35 hours per person during the year....So now the company manager team are positively concerned to develop an effective training system and they wish to encourage workforce to contribute to this" (Employer 4).
>
> "As a member of the world's society, we should emphasise modernising and industrialising our economy in the present competitive global economic climate, as we can see remarkable progress in some sectors such as steel mills, the oil and petro-chemical industries in our country" (Employer 5).
> "I think the modernisation of societies is an unstoppable fact, but the only difference is the speed of industrialisation in different countries. This speed would be changed (low or high) by various factors of which one is education" (Employer 6).
>
> "Increasing industry's contribution to the country's GNP was one of the important purposes which has been considered as a macro economic policy during the first and the second five-year plans. In order to achieve this purpose two essential tools were required: firstly, increasing industrial investment in the main and strategic areas, secondly, reform the training system both internally and externally" (Employer 7).

As employers believed that human resources are one of the fundamental means of reaching the economic goals, they also believed that in order to achieve these aims, the country's educational system should focus on the following three key points:

- first, the workforce should be educated or re-educated in order to increase productivity;
- second, required kinds of education should be taught from the very beginning of school; and
- third, economic and industry's requirements should be considered in the school curriculum (Employer 2).

In fact, from different points of views, a strong relationship between education and industries is important and necessary. This is because industries need qualified workforces in order to improve their ability to produce high quality products in a competitive market.

6.5.2 School Performance

The second area of enquiry dealt with employers' views concerning current secondary schooling where it attempts prepare pupils for the world of work. Employers were asked what they thought of the performance of school leavers in the workplace. Were their companies satisfied with the present way of preparing of young people for the world of work at school?

Most employers who were interviewed, commented that they were not satisfied with the present educational system in terms of the way it prepares students for the actual world of work. The reasons they pointed out were:

1. there is no co-ordinated relationship between schools and industry (Employer 1);
2. most of the schools look at work and working particularly in industry as a low status job, so the majority of students do not choose to go on vocationally-based courses which would lead on to work in industry (Employer 2);
3. the importance of work is not emphasised in the schools' curriculum (Employer 3);
4. even in technical and vocational schools, what students are studying is mostly different from what the world of work requires (Employer 3);
5. the efficiency of young people in the world of work even with a good degree, is not satisfactory, and they need to be re-trained in the workplace again even for very basic skills (Employer 4);
6. the school curriculum does not emphasise applied and practical knowledge and so students have not enough experience of what is going on in the workplace (Employer 5);
7. The National Educational Authority has not invested sufficiently in technical and vocational education which is closer to the requirements of workplace (Employer 8);
8. on the job work experience schemes (Kad Project) for high school students were not well organised by local government and finally failed (Employer 9).

The only kind of technical school where most of the employers were satisfied with the approach and performance was *'Nearby Factory Technical Schools'*. These schools are supported by companies and students are prepared for work

according to the companies' needs. They are usually located in industrial areas which are supervised by companies with a similar range of products (Employer 8).

Recent reforms in secondary education have changed employers' views and encouraged them regarding the future of educational system, but it is not still clear to employers what their role in the new system will be.

6.5.3 Skills And Qualities

The third area of enquiry looked at modifying those skills and qualities which are required in industries and businesses. It is important for educational policy makers to know which direction must schools follow, and according to what requirements they must be directed. Therefore, employers were asked what kind of skills and abilities they thought were essential, and also what role education plays in providing these qualities. The initial intention was to categorise their requests in the three main groups skills:

- academic skills;
- technical and practical skills;
- social and interpersonal skills.

Industries actually need both academic and technical skills. In addition some interpersonal and social skills are required. The most important skills and abilities according to employers are as follows:

> "Our factory needs a workforce which is inventive and creative, which has technical knowledge, can solve the company's problems, which is able to reduce production costs and time. For example if a gear box currently takes one and half hours, it is expected to take 45 minutes by a creative worker....From the human relations point of view, our fundamental aim is to

have a positive moral and human climate. In other words, the company's environment is very friendly and sincere, so our workers must maintain this climate" (Employer 5).

I believe schools should teach pupils to love 'work' as a national duty, and also students should be taught to obey the rules of the organisation and managers' orders. Pupils must be taught that if they were given an order to do something in the workplace or to follow a new project, then they should accept this as an administrative method.... I think in the school curriculum, management theories should be explained simply so as to help young people to know what an institution looks like. It is necessary for companies that students understand scientific approaches" (Employer 1).

"As a policy all new employees in this company must without exception have a general training course, what we need is someone who is literate, who can communicate with others, with an acceptable level of academic knowledge, experience and ability to work with high tech machinery" (Employer 3).

"basically students from technical schools are those who are required, because in practice, the majority of a company's workers who contribute most to the outcomes are those working in the technical fields. Graduates from academic high schools haven't high level of efficiency at work, they haven't the required morale (ethos) for work, to enable them to fit in at work, we should re-educate them.... If we have look at the relationship between education and industry in the country, we can see that one of the dimensions of education which must be reviewed is the kind of education that schools give to students. Our young employees are not accurate enough in their work, they don't pay attention to safety precautions, they are not sensitive enough to the roles in the workplace, mostly they are not ready to tolerate others in the same place or work with them and we receive a lot of requests from them to change their posts because of this problem. Education then must concentrate on these aspects" (Employer 2).

"When we deal with vocational , technical, and professional aspects of work, the development of skills is essential, but where we are concern ourselves with positions such as supervisors, the social development is involved and people must be equipped with social abilities rather than technical skills. But generally most young workers need to know how to approach a problem, how to modify it , how to evaluate it and how to solve it. They need to know how to communicate with other people and how to write a report. Those qualities need to be taught in schools" (Employer 7).

"It seems to me that there are three dimensions which are essential for a successful workfoce in the world of work: interest in work (morale); to have a speciality in work; and to have strong commitment to do the relevant duties at work which are essential for succeeding in the workplace" (Employer 6).

"Companies will have at least two benefits if schools prepare a flexible and multiskillised student: first, cutting production costs (saving in time and

> labour) and second , increasing the speed in spotting faults in the production process" (Employer 4).

However, according to this group of respondents (employers), it is possible to categorise their required skills and abilities for the world of work in the following groups:

1. academic skills including basic skills and knowledge, creativity, thinking, communication, problem-solving (which includes how to approach a problem, how to analyse it and how to evaluate it) , decision making, evaluation and self-control, reporting skills and presentation;
2. practical and technical skills including the ability to work with modern machinery, work and practical experience, speciality in a related field, familiarity with the work culture, interested in working, and accuracy and speed at work; and
3. organisation and interpersonal skills including managerial skills, team work skills, adaptability and flexibility, moral commitment, initiatives, friendly attitude to colleagues, and commitment to workplace roles.

> "Unfortunately, there is not an appropriate relationship between education and industries except for a limited relation between technical and vocational schools and industries. I think if both industries and education were to co-operate in establishing 'a school-industry links department', the educational system would be able to focus on the industries' needs in the learning process" (Employer 8).

Indeed, in a modern society the influence of business and industrial systems on the educational system is unstoppable. The economy follows its own direction, this is the major reason that educational policy makers and planners have reformed, changed and re-oriented educational policies and plans in order to for make school systems match with economic needs. This process (adaptation of education to economy) has brought about a close relationship between educational and economic systems which has led to various movements in this

field such as school-industry links or business-education partnerships. However, one way to getting started in reforming and reviewing schools' programmes is to pay attention to feedback from the companies. According to employers, when they were asked *'how do you think schools can prepare pupils to fit their companies requirements'*, they believed that schools can prepare young people realistically if they consider the following points:

a: it is essential to establish school-industry links department in both schools and industries in order to match the school programmes with industries' needs as is the case with the University-Industry Links Office (Employer 3);
b: developing a varied range of work experience for students in different fields according to their interests (Employer 1);
c: developing a range of research which is aimed at determining what is actually going on in the workplace and what are the needs. Education should accept from the start with a fundamental assumption that industries are its consumers. If we accept this then industries' opinions and views should be addressed in school programmes (Employer 7);
d: arranging a regular workplace visit not only for students but also for teachers and school staff, will affect the teaching methods of teachers (Employer 10);
e: the best kind of embodiment of co-operation between education and industry is the development of 'Nearby Factory Technical Schools' which on the one hand, provides better preparation of students for the world of work and on the other hand, often gives a guarantee for employing young people after school. It can be the best way to increase economic benefits for the whole country" (Employer 5);
f: increasing the professional and career guidance at all school levels particularly for students years eight to twelve (Employer 3);
g: emphasising and developing practical and applicable courses which relate to industrial and business circumstances (Employer 5);
h: equipping schools with comprehensive technical and vocational centres which can be shared by schools in the same area (Employer 1);
i: asking employers and industries' managers to participate in educational debates concerning the changing and reforming of schools to focus on economic needs (Employer 10);
j: emphasising flexibility and multi-skills in the school curriculum by stressing co-fields and abilities which are common between different jobs. If you divided all the technical operations in a company for example the car industry, about 70 to 80 per cent of them are general. About 10 to 15 per cent are specialised and about 5 to 10 per cent are very specialised. In other words, most of the operations are common in a company and if students are prepared with some flexible and common skills, training them for different jobs (multi-skilled) in a company is very easy" (Employer 7).

6.5.4 Work Experience

As many studies have revealed 'work experience' has a great impact on the quality of the future's workforce. It is a tremendously important element in the preparation of youth for their future employment. It is also an appropriate way to bring the school system closer to realistic conditions of the world of work. So the fourth area of the enquiry dealt with how and where employers prefer students' work experience scheme to take place. Employers were asked for which sort of following work experiences might their companies prefer a better preparation of young people for the world of work?

- Work experience at school;
- Work experience in the workplace; or
- Work experience at both school and workplace.

There was a high level of agreement amongst employers that work experience is a necessary factor in youth education. They pointed out that experience is a fundamental basis for youth employment.

> "There is no doubt that school can't give everything which is required for employment. For example in order to become professional at welding people must weld in practice not only reading a book about how to weld. On the job training is recommended for young people as a basic link in their preparation process for employment " (Employer 9).

> "Nowadays, the importance of experience in industry is increasing. While our workforce mostly consists of operators with some simple decision making,... three factors are very important for company efficiency: Having experience, familiarising the oneself with work culture, and being able to work in a group" (Employer 2).

> "Although, experienced people are required more, it is better for schools to place emphasis on real elements of work rather than theoretical knowledge and the memorising of it" (Employer 10).

> "What industries need is that those people who enter the labour market must be so called real labourers. In other words, they have to have created the morale (ethos) of working in the company in themselves" (Employer 9).

The approach of schools in running work experience programmes was not appropriate at all according to employers. They believed that schools should restructure these programmes. They highlighted that current work experience wastes time and money, because of the lack of guidance for students in selecting their work field and also because of the lack of supervision of their activities.

Regarding the sort of work experience which companies prefer - work experience at school, at workplace, or at both the school and workplace- there was some disagreement amongst employers. The most remarkable disagreement was among small businesses and factories and large companies on this matter. Small businesses believed that the students' preparation for employment and also work experience programmes should take place outside those companies, while large companies were ready to give assistance to schools in providing effective work experience schemes for their students. Employers from small companies commented that their companies did not wish to be involved with running work experience activities at their workplace for the following reasons:

1. their companies are small and while they face shortage of space, facility, number of machinery and other limitations, they are unable to service schools properly;

2. they belong to the private sector and they do not want to spend money and time in this area. They would prefer to employ those who have been trained already;

3. any co-operation with schools will cost industries a lot of money, so the government should support private factories. These companies have not received any financial help from local government; and

4. they believed that it is better for government to establish, direct and support a comprehensive centre for training and running work experience scheme, particularly in rural and non-industrial areas rather than to depend on small and private businesses.

But big companies, which were mostly state industries, strongly believed that participation of both sides (schools and industries) in this process is required. They believed that schools generally should prepare students with basic skills, abilities and attitudes, and the companies' job specifically would then to give students those skills which fit them for the world of work. Therefore, for the majority of employers the sharing of both schools and companies in the work experience process is necessary. Most employers believed that the only type of secondary school that involved both schools and companies in the preparation of youth properly is the 'Nearby Factory Secondary School' (Honarestane Javar Karkhaneh).

> "I think the best form of mutual co-operation between educational system and industry is the establishing of the 'Nearby Factory Secondary School'. That is the most attractive way which not only will increase youth employment because companies will guarantee it, but in the long term

companies will have more benefits because of their well-trained employees" (Employer 8).

Employers' responses to the question asking what their company would do to help schools improve those services regarding their students preparation programmes for work life, were positive.

All employers who were interviewed agreed to support schools' programmes to improve their services concerning the preparation of students for the world of work. The companies' support can be described in one of the following ways:

- technical and staff support: sending technicians and specialists to schools, giving information about technology and details about jobs;
- administrative support: allocating facilities for school programmes and co-operating with schools in carrying out their plans; and
- financial support: sharing in some of the related costs. According to a new circular, two per cent of the companies' gross income (selling) has been allocated to educational systems for improving its schemes regarding equipping young people with required skills and abilities. In fact, this is the biggest financial supportive action. The only way to escape paying this, is to establish a technical school by company. It seems that companies prefer to pay money than to run a school.

It seems that most companies prefer to support schools by paying directly than in other ways. In this respect, one of the company's manager argues:

"But when you want to decide which way is best: paying two per cent of revenue or establishing a school, the question comes to mind which one is cheaper for company. By a simple cost benefit analysis most companies especially small businesses prefer to pay money to support educational systems rather than the second way. Establishing and running a technical vocational school is much more expensive, because technical education is the most expensive kind of education from the materials and required equipment point of view" (Employer 7).

Summary

The responses of interviewed employers provided the researcher with some relevant information about how the educational system looks and how the schooling system in terms of preparing of young people for the world of work should be. These responses indicate that they were not satisfied with the performance of secondary schools. They revealed that they have not been asked to participate in any educational policy making regarding education-industry links, whilst they are ready to support the schools by any means.

Also, they believed that schools do need to teach skills, attitudes, and understandings that are essential to success in the world of work. Schools should teach young people basic skills in mathematics, reading, listening, speaking, and writing. Schools should also teach those skills required for technology and business. These skills can best be taught in career, business, and vocational education classes which are closer to the workplace. School should help young people develop the attitudes toward work, its environments and its roles that are inherent in the "work ethic". Students need to understand the value of doing a job to the best of one's ability, of being reliable, of being self-disciplined, of respecting oneself and others, and of being dedicated and sincere. These attitudes should be developed in very grade and in every subject. Students need to understand how business functions and what role they will have in it. They need to understand how to solve personal, social, and work-related problems. These understandings will be adequately prepare the

young to become workers. Employers believe that in the future, we will need citizens who are both literate and employable. Schools can and should teach the skills, attitudes and understandings to ensure this; a responsibility which our educational system has not done.

6.6 Key Findings

- The secondary school's curriculum is not congruent with work life needs and contexts.
- There is no sufficient, regular and systematic occupational and professional guidance and counselling for directing pupils toward and introducing them to available employment opportunities.
- The school curriculum has an emphasis on theoretical rather than applied and practical knowledge.
- There is no continuous and strong relationship between the system of education and the workplace for the exchange of views and experiences.
- The secondary school curriculum is centrally directed and does not take into account local employment opportunities.
- Technical and vocational education is not considered academic education by the majority of parents and they do not allow their children to study in these fields.
- The Ministry of Education has not developed technical and vocational education in appropriate ways so that students do not have enough interest and motivation in these fields.
- Employers are not satisfied with the current system of secondary education or with the performance of school leavers.

CHAPTER SEVEN

CONCLUSIONS

7.1 Introduction

For learning to be relevant enough to young people to sustain their motivation and commitment, it could be a part of a clear pathway to success, replete with real opportunities that are worthwhile and attainable. To create this reality, it seems that educational reform and practice needs to be linked to economic development and employment prospects.

The socio-economic changes currently taking place in many developing countries require that countries undertake a restructuring of secondary education. Since the demands of producing a skilled workforce to match societal needs at the production, technical and professional levels are great, it is important for secondary education to prepare young people who are highly motivated and who want to pursue learning as a lifelong process. Students in Iran are leaving secondary school while what they have learnt is different from what the world of work and the labour market requires. This is because in the Iranian schooling system very little attention is given to what young people, as the future employees, need and how the system can increase their career abilities to participate in the work life.

A brief look at educational reforms in most countries around the world makes a clear point that one of the strong bases for these reforms is attempts to bridge the gap between education and the economy. To achieve this crucial aim, it is necessary to have a clear idea about the nature of education and economic links, the theme of education for work, and those attempts in which vocationalisation of secondary education is the central point. In this respect, however, linking education to the economy, a relating education to work, and emphasising careers education and guidance in schools are important parts of this process. Possibly, in this review there were a lot of lessons for those societies which are in the beginning of this way e.g. reforming their educational system.

But a greater lesson perhaps, is that we should never ignore the important roles which the countries' culture, traditions, and social values in success or failure of any foreign countries' experience can play.

7.2 Education And The Economy Relations

In *'Skills For Productivity: Vocational Education and Training in Developing Countries'*, Middleton et al (1993) in discussing the role of skilled manpower in economic productivity, suggested that:

> Both common sense and economic research support the idea that the quality of a nation's workforce is important to economic growth and social development. Two factors are generally considered to be the prime determinants of the quality of a workforce. One is labour productivity, or the value of the goods and services produced by a worker. The second is the flexibility of the workforce, or the ability of workers to move across sectors of the economy and between industries as the structure of the economy changes (Middleton et al. 1993, p. 1).

In attempting to choose the best pathway to achieve sustainable economic development, along with industrialised societies, the vast majority of developing countries have come to the conclusion that although economic development is a complex phenomenon, with many variables influencing whether or not it occurs for any particular country, there is no doubt that for these countries human resource development is the key to their development (Middleton et al, 1993). As the former President of the World Bank, Barber B. Contable has put it:

> In the new century, the dividends from knowledge will grow dramatically as the penalties of ignorance increase. Much of the gulf between misery and opportunity, squalor and hope, can be bridged by education, by investing in the bright inquisitiveness of children... Education and human resource development more broadly, must be a central focus of the development effort in the 1990s (quoted in Lockheed and Verspoor, 1990, p. 2).

In looking for ways to accomplish effective human resource development, many countries believe that improvements in the content and organisation of their educational system plays a crucial role in enabling such development to occur. In coming to this conclusion, educators and researchers have looked to the examples of 'Asia's Emerging Economic Tigers' with regard to the strategies these nations have adopted to achieve their national economic development goals. Countries such as Singapore, Thailand and the Republic of Korea, all of which, in their policy and planning for sustainable development, have stressed the importance of developing an effective and efficient educational system.

Therefore making education more responsive to a rapidly changing socio-economic environment is a major challenge to a country like Iran , since

efforts at economic reform and modernisation will have little effect if educational reform is not made part of the process (Wilson et al, 1987; Lockheed and Verspoor, 1990). Hence, for any country trying to accelerate economic development, schools and training institutions are some of the main tools for developing knowledge, skills and attitudes needed to satisfy rapidly diversifying and changing labour requirements (Romer, 1986; 1987; Prais, 1989; OECD, 1994).

However, there are some critical points that might be considered by key educational policy makers, schools, and employment and information agencies in order to link education and the economy in an appropriate way as follows:

- the prospects of educational success could not be lost to youth prior to the point when they are forced to contemplate their future;
- every young person maight possibly have at his or her command a quality core educational background as a framework on which to base future decisions and to integrate further knowledge;
- educators could make the commitment to keep the vast majority of young people within an acceptable band of achievement;
- it will be difficult to build high quality systems of employment preparation in which the majority of youth can participate and find success;

- rethinking the country's educational approaches to compensatory and enrichment education is required to ensure that every child receives a rich and rigorous education with continuous support appropriate to their need;

- employment preparation cannot take place in the absence of job opportunities;

- young people need to be aware of the link between their employment preparation and the economic opportunities and viability of their communities;

- a little economic viability leads to a little hope and personal investment on the part of youth;

- local opportunities could be emphasised in any educational programme otherwise young people might be accorded the opportunity to access opportunities outside of their localities;

- business and labour could provide employment opportunities for young people and share in their educational development and finally

- mechanisms might also exist to help link young people with these willing business and labour partners.

However, young people might be exposed to role models in those careers with which they can relate, preferably in a mentoring capacity. Knowledge and skills need to have immediate applications, along with multiple opportunities for reinforcing and refining those skills. This is the true

challenge for school and work-related learning and those involved in creating these types of reinforcing experiences.

At present, however, policies for involving firms and companies in youth educational programmes are not readily available. The government may devise supports to industries and trade associations to support the capacity of their members to create and support quality learning environments for young people as well as incumbent workers. According to the new legislation which was introduced in 1996, industries and businesses have to pay two percent of their net revenue to the Ministry of Education in order to support technical and vocational education at the secondary level and this perhaps is an important step in this respect.

However, the government could also continue and escalate efforts to develop national academic and skill standards. Standards are essential to the development of a quality educational system because they help to create a common vision and are a fundamental means to assess and benchmark results. In addition, labour market data might also be readily available to help predict labour market needs, and mechanisms could be in place, such as staff and curriculum development, to shape programmes in line with these changing needs. At present these data are not routinely available to programme providers or consumers in a way which will inform programme development, and decision making. Possibly we cannot take shortcuts or allow diminution of our commitment to the ends of youth. And also, we need to make assurances to the Iranian young people that if they are willing to

make the individual effort, they will have occupational options of value and access to further education.

7.3 Education for the world of work

In the recent past when educators talked about educational reform they referred to phonics and inventive spelling, open classrooms, schools without walls, and mainstreaming. Theories governing education abound. However, only recently has a unified effort begun to not only address the process of education, but also to respond to the growing need for a population truly prepared for the workplace. The worlds of school and work, generally, have been traditionally alien to each other. Thus successful programmes in order to link school to work require strong bridges to connect schools to workplaces. In our rapidly changing world we can no longer ignore graduate students who have no idea of how to get work or what the world of work is like.

This study, however, highlighted that there is an increasing emphasis in most of countries around the world, on relating education to the world of work, this being viewed in a much broader sense than merely preparing individuals for entry to a particular occupation. This reflects the belief that education systems need to prepare pupils in a way to enable them to choose socially useful and productive work in industry, science and so on. There is also the realisation that a country's economic development will only occur if a

sufficient supply of trained workforce exists, thus schools need to be responsive to the changing requirements of economic systems.

However, following UNESCO (1992), the increasing emphasis on education for the world of work has been simulated by such important factors as:

1. the need to ensure the relevance of education to countries' socio-economic development priorities;
2. the accommodation of increasing technological developments in society in relation to labour force requirements;
3. a wish to reflect the changing expectations of employers in education;
4. helping school leavers obtain access to employment;
5. developing in pupils a basic literacy with regard to science and technology; and
6. a wish to contribute to the modernisation of education system so that the changing needs and aspirations of both individuals and the society as a whole are met (pp. 366-78).

These trends, which relate to the interface between education and the world of work, entail five particularly important aspects. The first is practical activities relating to work, which are considered as an integral part of the learning process since they enable a suitable balance to be struck between theory and practice. The second is participation in work activities which help strengthen and develop what are regarded as desirable social attitudes; the value of the work ethic and participation in national development. Thus educational programmes increasingly embody work experience and other related schemes. Third, career guidance and exposure to the world of work shouls be available to ensure that a solid foundation is in place so that young people and their parents can make informed decisions about their future and can select the appropriate pathway. This requires a radical rethinking about our current structure of guidance and counselling and the way we initiate young people for adult roles. Fourth, to maintain motivation and optimum

performance, student progress might be determined and feedback provided continuously. This suggests the need for different modes of assessment designed to inform student progress and programme success rather than penalise and discourage student advancement. In this regard, there is progress being made toward the development of more authentic methods of assessment including portfolios, project work and competency based measures. Since the recent Educational Acts (1991), officials have set up a assessment system akin to the role of quality control to check all educational changes and improvements continuously which affect the quality of reformed system. They can then provide quick feedback for the correcting or further improving of the secondary education. The fifth aspect concerns the provision of transition from school to work through the preparation of pupils for the world of work. Trends in this respect include linking education programmes more closely to work skills and developing appropriate work competencies, habits and understanding. This integration of vocational experiences with general education has also been sought in many countries and has resulted in courses in basic practical skills development, self-employment programmes and entrepreneurial training. However, these aspects are helping to broaden the foundation of general education concerning the world of work's needs.

The structure of programmes however, could mirror a commitment to the development, success and high expectations for young people. In this respect, hopefully the Ministry of Education has developed a number of promising models such as career education and guidance, high schools with a new focus

and courses, restructured technical and vocational education programmes, and a version of youth preparation, that reflect a restructured learning environment or programme that provides options for multiple pathways including attendance at three-five year TVE courses. These options also require a commitment of focus by young people and ensure that if they do complete secondary education with a good score, they are able to go to the higher education easily. What we need however is to make these opportunities more universally available in addition to other options that provide for greater flexibility in the time, place and structure of learning. This means recognising the skills and processes valued in the workplace and ensuring that young people have access to these values, knowledge and experiences whether they are simulated in a school or service learning environment or in an authentic workplace.

In sum, the current secondary schooling system as it exists in Iran provides little or no practical-based education to young people while they are in school. Little is available in the way of school to work transition. The vast majority of training which is available to students is short term and discrete courses out of schools in vocational and technical centres directed by the Ministry of Labour. These courses provide no tangible connection to the job market place or further educational or training advancement. Indeed, they receive nothing from schools while industry needs them qualified and skilful. The result is that most of our young people flounder in the low skill, part-time and short term labour market in their early productive life.

7.4 School curriculum and required skills

The dilemma of curriculum for many young people can be simply put: schools are supposed to prepare one's future occupational role but they operate in isolation from the actual world of work. As discussed in Chapter Six, to a great extent, the curriculum ignores this situation but there have been efforts, in the past and currently, to re-orientate at least parts of it to meet the vocational, as distinct from academic requirements.

It is necessary for us, as educators, to view the school curriculum from both a sociological perspective, particularly in terms of social structures, and from a theoretical perspective. The workplace, the place for which we claim we are preparing people, is an integral part of our society or our culture. The workplace is a part of a dynamic social system. The curriculum is a system and a part of a larger system e.g. 'education'.

In the reviewing how curriculum interacts with and supports the economic structure, including that part referred to as the workplace, we need to consider some major trends that are occurring in the work place. First, it is generally accepted that most of the societies are in a transitional period between an industrial society and an information society known as the post-industrial period.

Second, these major trends have substantial impact on the workplace and the kinds of skills and knowledge employers seek in prospective employees. What are the kinds of skills and knowledge needed by employees today to

ensure that they can obtain and keep rewarding work? In *Workplace Basic*, Carnevale et al (1990) outline and discussed seven broad categories which are as follows:

1. The foundation: learning to learn;
2. Basic academic skill competence: reading, writing, computation;
3. Communication skills: oral and listening;
4. Adaptability: creative thinking and problem solving;
5. Personal management: self-esteem, motivation/goal setting, employability/career development;
6. Group effectiveness: interpersonal skills, negotiation, and teamwork; and
7. Influence: organisation effectiveness and leadership (quoted in Heckman, 1993, pp. 2-3)

Therefore, if workplaces are becoming more flexible and less well-defined, then what implications does that have for skill requirements? Many researches suggested that educated workers are better able to cope with change and uncertainty. Schultz (1975) argued that education improves a worker's ability to deal with "disequilibria." And as Levin suggested in 1987, the same logic points that workers with higher educational levels are able to operate more effectively than those with less education in decentralised work settings with high levels of employee involvement. Bartel and Lichtenberg highlighted that the average educational level of an industry's workforce tends to be higher in industries with newer equipment. They also point out that industries with newer equipment are likely to be those in which the technology has changed recently. This suggests that if on average the pace of technology increases, then there will be a general increase in the demand for higher-educated workers (quoted in Berryman and Bailey, 1992, pp. 27-8).

7.5 Vocationalisation of secondary education

A large empirical literature has developed over the last thirty years arguing strongly against vocational schooling on cost-benefit grounds. This literature, which compares labour market outcomes in earnings and employment of vocational schooling with general schooling, mainly at secondary level, has been extensively reviewed by Zymelman (1976), Psacharopoulos (1987a), and Talik (1988).

A new "wave" of research has qualified the established orthodoxy. These recent studies have shown that when employment opportunities are available or growing and a match is made between training and available jobs, vocational schooling has produced higher productivity, wages, and present values of investment than general education does (Min and Tsang, 1990; World Bank, 1990; Arriagada and Ziderman, 1992).

More frequently, however, favourable conditions are not present, and net returns to vocational schooling are comparatively low. Examples are found in low-income countries where training capacity exceeds employment demand and where labour market factors operate to reduce external efficiency e.g. the match of training with jobs (Psacharopoulos and Loxley, 1985). One possible explanation for failure of vocationalisation of secondary schools in most of the developing countries, is the lack of an appropriate conditions in which technical and vocational education should be implemented. While in the developed countries the vocationalisation failure returns to the inflexible structure of this system not mainly the lack of funds and basic conditions. In

fact, it seems that the speed of rapid economic changes in advanced countries is the major reason that the educational system in these countries has not been able to adapt itself to new economic conditions. In these countries new Vocationalism aims to increase students' employability with core skills such as problem solving, adaptability, communication skills, mobility, and flexibility.

However, beside these disagreements between educators about whether secondary schooling should be vocationalised or not, different models for linking education to work have been developed. In Chapter Four we discussed the following three main models: School-based models, Work-based models, and Mixed models. All of these models have their own specific characteristics, but it is difficult to say which one is more efficient.

However, three criteria, derived from research on these models, in particular the German dual system and US experience, which can be considered as a guideline for the Iranian policy makers in order to introduce a related model for the country's secondary education are:

- The system needs to have enough status to attract and motivate young people.

- The system needs to provide incentives and institutional support for employers to offer high-quality youth training.

- The system might be feasible, i.e., one that is suited to the Iranian context and can be implemented with the resources available.

7.6 Conclusions of the empirical research

Generally, in clarifying the relationship between secondary education and the economy's needs in terms of human resources, this research concludes that the current secondary education system in Iran has not been structured in the way that responds best to those needs. The majority of teachers, students, employers, and even policy makers at the Ministry of Education believe that there is a big difference between what schools teach and what our industry requires. This can be seen by taking into account industrialists' views about the employment requirements, and teachers' and students' views about schools' performance in this respect, and how schools emphasise those required skills, attitudes and abilities.

Teachers and Students

Most teachers and students in this study have agreed that the Iranian secondary education is struggling with the following major weakness in its policies, structure, and practices:

- although the school curriculum presents a wide and heavy range of subjects in the school programme for different secondary high school paths (see Chapter two), students are not prepared in the essential skills and abilities to meet the labour markets needs (see Figures 6.1 to 6.6). Indeed,

the school curriculum includes most of the essential subjects which a modern economy needs, but it needs to be rearranged and represented in an appropriate way. If curriculum planners reorder and restructure the current materials and subject, they would be equiping students with the required skills for employment.

- while it seems that that involving industrialists in designing the school curriculum is essential and education might reasonably be linked to industry, the results show that curriculum policy makers appear to have ignored the employers role in the development of the current school curriculum (See Figures 6.7 to 6.10). Additionally, because of a highly centralised system, the schooling system is not sensitive to the local employment requirements and needs.

- while most stakeholders such as teachers, students, parents, and school governors believe that a mixed curriculum (which counterbalances practical and academic subjects) will maximise youth employment chances, secondary education is still a highly academically-based system (see Figures 6.11 to 6.16). In addition, most teachers and students describe the school curriculum as an ineffective system which does not take into account the future employment needs of pupils; it is not adequately resourced; its elements are not sufficiently integrated; it does not emphasise the world of work sufficiently; and its practical elements are not taught in conjunction with local industry (see Figures 6.22 to 6.26).

- no connection can be found between the teaching methods used in the school curriculum and the employment prospects of pupils, while a work-related education requires a work-related teaching approach. Also, there is no sign of any other effective service which would maximise pupils opportunities for employment in the school programme such as careers education and guidance (see Figures 6. 17 to 6.21).

Teachers and students believed the current secondary education with a such problematic structure is some how responsible for youth unemployment in Iran (see Figures 6.27 to 6.37), but policy makers by numbers of ways can correct this system so that the preparation of young people for the world of work and maximising employment chances are its central aims (see Figures 6.38 to 6.54).

Educational policy makers

The opinions of senior officials at the Ministry of Education about the relationship between education and the economy in general and preparing secondary school's pupils for the world of work in particular are remarkable. Their views indicate an awareness about the necessity of education and the economy links and long standing willingness to correct. But it seems because of the country's major socio-political problems such as eight years destructive war with Iraq, international tensions mostly with western countries, economic sanctions and other internal crises, they have been unable to reform the educational system effectively. Introducing the

Education Acts 1991 after several years study, and comparing international systems, therefore means that the government has given education a top priority.

In order to reform the country's educational system two aims were considered necessary: conformity with the economic policies and consideration to the social needs for education. These two aims forced officials to focus on a model of secondary education with the preparation of young people for the world of work as its central aim. They have realised that the current secondary education which prepares students for higher education, ignores technical and vocational education, lacks an effective relationship with the labour market, is controlled centrally and neglects local and regional requirements, cannot respond to the needs of the economy and society in modern age of Iran. Thus in order to correct these weaknesses and based on other countries' experiences such as Germany, Australia, Japan, and England the government introduced a new system for secondary education which is gradually going to replace the current system. In this system more attention will be given to technical and vocational education and which aims to counterbalance practical and academic courses at this level. Although official are optimistic with the recent reforms judgement about the effectiveness of this system remains.

Employers

The responses of interviewed employers provided the researcher with some relevant information about how the educational system looks and how the schooling system in terms of preparing of young people for the world of work should be. These responses indicate that they were not satisfied with the performance of secondary schools. They revealed that they have not been asked to participate in any educational policy making regarding education-industry links, whilst they are ready to support the schools by any means.

Also, they believed that schools do need to teach skills, attitudes, and understandings that are essential to success in the world of work. Schools could teach young people basic skills in mathematics, reading, listening, speaking, and writing. Schools could also teach those skills required for technology and business. These skills can best be taught in career, business, and vocational education classes which are closer to the workplace. School might help young people develop the attitudes toward work, its environments and its roles that are inherent in the "work ethic". Students need to understand the value of doing a job to the best of one's ability, of being reliable, of being self-disciplined, of respecting oneself and others, and of being dedicated and sincere. These attitudes need to be developed in very grade and in every subject. Students need to understand how business functions and what role they will have in it. They need to understand how to solve personal, social, and work-related problems. These understandings will be adequately prepare the young to become workers. Employers believe that

in the future, we will need citizens who are both literate and employable. Schools can teach the skills, attitudes and understandings to ensure this; a responsibility which our educational system has not done (see Chapter Six).

One of the possible explanations for the remarkable consensus which the research has shown between various stakeholders in this study, is the problematic structure of secondary education in terms of preparing students for the world of work. It seems the current situation of school leavers from employment point of view is so risky that everybody even educators with a high academic backgrounds have confirmed that.

7.7 Last not least: the researcher final words

It seems education is one of the most important social institution which has much wider objectives than merely preparing young people to become more efficient elements in the industrial and economic process. An economy with a better-educated and better-trained workforce may be expected to produce more efficiently: that proposition hardly need elaboration at a general level. But the education and training system is just one factor in economic success.

Though having basic skills clearly cannot prevent unemployment, the data presented in the literature survey lend support to the proposition advanced of the beginning of the argument that these skills and work-related skills that build upon young people, provide a degree of protection against it. Logically, adequate education is not merely a sufficient but indeed a necessary condition for getting and holding a job. In this respect finding the right

balance of school-time to be devoted to matters connected with work, compared with time devoted to general (academic) studies, has everywhere become a more important issue.

The transition from high school to work is a serious problem in Iran. Many high school graduates spent their first years after school unemployed or job hopping, with consequent loss of training and productivity. The problem is hard to conceptualise because it involves many complexities. the school-work transition links three different parties - youth, schools, and employers - and problems can arise from: shortcoming in one or more parties; problems of information flow between them; and or problems in their relationships. To me as a researcher in Iran problems in the process of school-work transition are from all the above types. Another word, the way which all sides participate in this process, the kind of information which flow between them, and the structure of their relationships are problematic.

This study described efforts to improve academic learning for high school students to be applied practically to develop workplace competence and flexibility by integrating academic and vocational education. The need to prepare young people to fill the jobs needed by the changing Iranian economy is a problem of increasing concern. A large number of student are tracked into a general high school programme. They are not provided with either critical academic skills, or the vocational skills for an upwardly bound employment path. The result is an effort to build up a reasonable linkage between education and the world of work by creating a variety of education

models that demonstrate how academic learning can be applied practically to develop workplace competence and flexibility.

One option, integrating academic and vocational education, looks practically promising. It seems that the integration of these two is a curricular and instructional strategy that makes learning more available and meaningful to all students. A programme of sequential courses that allows students to achieve vocational competencies as it fosters learning of abstract or theoretical concepts under applied conditions. Moreover, it replaces job-specific instruction of traditional vocational education which limits students' employment opportunities on the one hand and high abstractive and theoretically-based education which is not related the world of work on the other with contextualised knowledge that provides students with a range of problem solving and employability skills. Integration also fosters teacher collaboration in curriculum planning and co-ordination of instruction. Finally, it involves the business community in the programme effectively. It is expected that this kind of education to some extent affects on the rate of unemployment amongst school leavers in Iran.

7.8 Recommendations

Along with reform the school curriculum needs to be re-orientated in an appropriate way so that young people can be prepared for the world of work. Educational programmes need to be founded on good educational practice, be well-funded, and embrace state of-the-art workplace knowledge and

experiences. Teachers and workplace mentors need to be well-trained and able to provide ample support through a variety of approaches to ensure student success. Programme completion may result in respected credentials and worthwhile opportunities. But we should never forget that without economic and industrial sectors' support, education may not be able to meet this responsibility alone. In this respect Easton and Klees (1992) note that:

> It is not enough to seek educational policies that can yield better educated people. For such policies to work, we must also be thoughtful about social and economic policies that can yield better quality work opportunities (Easton and Klees, 1992, pp. 123-142).

Following the above statement in terms of the economic sectors' commitment to educational reform, this study recommends the following:

Firstly, that educational policy makers and schools in Iran intensify their effort to communicate and involve industries in the design, planning and implementation of vocational-based education programmes. The importance of interaction between education and business/industry cannot be overstated. The need for closer working relationships and meaningful interaction between employers and educators was stated repeatedly in this survey both by involved groups and reviewed studies around the world.

This research also recommends that business and industry representatives invite local secondary school teachers and administrators to attend meetings of the organisations and trade associations with which they are involved and encourage active involvement.

Secondly, the establishment of opportunities within the workplace which provide structured work-related learning experiences for students at the secondary and post-secondary levels. Getting real-world work experiences was stressed in this research. Terms like job-shadowing, on-the-job experience, co-operative education, internships, co-training, apprenticeships, trainee programmes, and mentoring were common whether in the literature review or among the responses from secondary schools' teacher, students, senior policy makers and companies' managers.

Hands-on experience and on-the-job training in combination with classroom training is seen as a necessary part of secondary education in particular technical and vocational courses by the companies. Whilst numbers of companies have been involved in co-operative education programmes, most employers have expressed their interest in participating. For students, specially, the experience of seeing the connection between education and work could make the difference between being turned off or on to school and future opportunities. The research encourages teachers to have students make contacts with business while they are in school, and when possible, assist them in gaining the work experience they need and giving them guidance in the skills they will need to acquire and keep a job. All respondents stressed the importance of students making contacts with business by any means.

Thirdly, communicating between educational policy makers and employers to ensure that industry-based performance standards and competencies are a vital part of the secondary schools' programmes. Results of this survey

indicate a need to improve course contact to meet the needs of workplace. Responses included: "Give students a broad, practical education in skills they will need for the jobs that are available"; "Provide them with more hands-on training to prepare them for situations which will arise in businesses"; and "put emphasis on careers education, job search, motivation, interpersonal skills, critical thinking skills and so on". Although, the lack of any system of standards or recognised qualifications itself is a fundamental problem in the Iranian educational system.

The results suggests that more emphasis needs to be placed on work-related skills; encouraging employers' involvement in the learning process e.g. presentation in classrooms; using employer committees in establishing competency levels; emphasising on-the-job work experience; and highlighting the importance of constant communication between schools and business to ensure that educational programmes meet rapidly changing workplace needs.

Fourth, The research recommends that schools promote marketing efforts designed to support, reinforce, co-ordinate, and expand vocational-based education. The effectiveness of technical and vocational education is applauded by those who are familiar with the programme and the quality of the employees it produces. However, there are many not only among parents, students, educators but also in the labour market, who are unaware of the value of technical and vocational education. Therefore, institutionalising an effective career guidance, emphasising academic fundamentals in the courses,

communicating employment needs to the local schooling system and involving students in on-the-job work experiences are possibly important supportive ways for vocational-based education at the secondary schools.

The lack of vocational preparation in our high schools means that the majority of our students enter the labour force completely ill-prepared for any but the simplest work. No systematic school-to-work transition is available, only an ineffective work experience was offered to secondary schools' students which shut down by the Educational Acts of 1991.

7.9 Suggestions for further studies

Owing to the nature of this study as preliminary research, and to the limitations associated with this study in the context of limited availability of funds and time, it is important that more in-depth studies should be carried out in some of the issues presented in this study. Research should be carried out to:

1. Review the role and the impacts of the new secondary education on the youth employment circumstances.

2. Develop effective ways of vocationalising secondary education in order to prepare students for the world of work by determining how:

- an effective schools, business and industry partnership can be influenced to raise education and work links;

- work experience schemes can be considered as an effective factor in the preparation of pupils for employment; and

- evaluation of employability skills can be part of student assessment and reported in the formal report used at secondary school.

3. An intensive study of the labour market in order to:

- find out its needs and capacity for providing the skilled and semi-skilled labour force for the present and the future.

- ascertain whether new secondary schooling can respond to the labour market needs.

- improve the quality of technical and vocational education.

- further qualitative research be conducted to determine the gaps between what employers see in new employees, skills and what educational officials believe bout schooling efficiency in this respect.

4. A study of how practical and applied subjects might be incorporated into the secondary school curriculum in a way that can both facilitate students' entry into the labour market, and leave the door open for entrance to higher education.

7.10 Evaluation of the study

Many problems arose during different stages of designing and carrying out this study. In order to minimise the effect of the problems on the research

validity, the researcher made every possible effort in this regard. But the following major problems would be likely to have an effect on the outcomes of this study:

1. The lack of relevant studies in the field of the relationship between education and the economy in Iran made the researcher rely heavily on studies carried out in other developing countries which have a similar cultural background and related studies in developed countries. The researcher tried to find information about secondary education system in Iran from different sources but with little success. For example, UNESCO was contacted to find any related literature in the field of secondary education in Iran.

2. The lack of funds had an impact on the design of, and the setting up and trialing of the main studies throughout the period of carrying out this research. The trial study was carried out here in Britain among two Iranian schools and Iranian students at the university of Bath. The researcher necessarily lost some of the insights which could have been gained if he had been in direct contact with respondents in a real climate, and with the Ministry of Education as a sponsor of the research. Such insights could have led to a better construction of different items.

3. Finding transport for distributing and collecting the questionnaires in schools was difficult as these were widely scattered across the country.

4. The time available for collecting data was insufficient to allow the work to be carried out as previously planned.

But beside these problems which undoubtedly have had an impact on this study, the following were some of the strengths in the actual research process:

1. The sizes of the sample of teachers (200) and students (200) were large enough to facilitate an adequate statistical analysis. Moreover, the size of the sample and the process of its selection provide a solid base for a valid generalisation of the results.

2. The results were validated by using triangulation, i.e. results were checked by using more than one method for collecting data for the same issue. For instance, questionnaires and informal discussions were used. Additionally, for some issues, the same question was constructed in a different format to examine the same issue.

3. The data were analysed by using different non-parametric techniques in order to increase the confidence which could be placed in the results obtained, and thus the conclusions which were drawn. No contradiction was found in responses of participants for different items.

However, this study has its own limitations, and it has been necessary to take into account the effect of such limitations on the results obtained. The following are some of these limitations:

1. This study depended on both quantitative and qualitative data collected by using questionnaires and interviews. Although the researcher tried to minimise the limitations associated with both the process and the data collected, the effect of the following factors could not be totally removed:

- The construction and translation of the questionnaires was a problematic process. Although the questionnaires were carefully constructed and re-constructed according to the suggestions from the pilot study and experienced individuals, generating clear understandable items for all respondents is a difficult task. The questionnaires were constructed in English and then translated into Persian. As stated in section (5.3.6) all the necessary steps were followed to minimise the effect of translation. However, it was not possible to assess exactly the impact of both the construction and the translation of the questionnaires on the collected data.

- The pilot study was carried out by involving people who were living in the UK. This is why the researcher lost the opportunity to be in direct contact with teachers and students who are really involved with the system in order to have insights about the clarity of the research questions and assumptions and also how they might be altered so as to be clearer to each respondent.

- Teachers and students may be affected by different factors in the selection of particular answers. For example, at the time in which this study was carried out the government was involved revising a new secondary

education in which the vocationalisation of education was one of the first priorities.

2. Because of the limits on available funds and time, and the difficulty of travel in a country with such a huge area, the research has not carried out nation-wide and some regions were excluded from the study. The result of this study should be considered only for these areas which were covered. Any generalisation beyond that should be treated with caution.

3. Although employers were included in this study and their views about secondary education and technical and vocational were important in order to gain insights about high school graduates' performance at the labour markets and their willingness to provide training facilities and contributions to the financing of vocationally-based courses at secondary school level, in many cases the researcher found that they were not relaxed with the tape recorder. Therefore, some of them did not allow the tape recorder to be used during the interviews. Hence, I took note which may not be as accurate as using tape recorder.

4. Asking teachers and students four questions of 7-to 10 on behalf of others such as parents and school governors about the kind of education which improves youth chances for employment, may was a misconception. Because parents', and school governors' perceptions about the kind of education which may maximise youth employment chances are not necessarily the same as those that the teachers and students imagine.

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APPENDICES

Appendices *Page*

Appendix 5.1

School of Education
University of Bath
(Teacher Questionnaire)

Dear colleague:

This questionnaire is a part of my research work at the University of Bath (U.K). I should be grateful if you could spare the time to complete and return it. Your responses will be treated confidentially.

The purpose of my research is to investigate people's idea about the problems and weaknesses of the high school curriculum regarding the relationship between education system and employment in Iran, in particular, the ways in which school curriculum might link to labour market needs.

Part A: personal Details

Gender:
☐Male ☐Female

Age: ☐21-30 ☐31-40 ☐41-50 ☐51-60 ☐60+

Qualification: ☐Diploma ☐B.A ☐MA(MSc)
☐ Other (please specify).. . . . . .

How many years have you work as a teacher? (teaching experience)
☐0-4 ☐5-9 ☐10-14 ☐15-19
☐20-24 ☐25-30 ☐30+

Main subject of teaching:. . . . . .

Present position in school: ☐Teacher ☐Headteacher
☐Other (please specify). . . . . .

Part B: main questions

1. Here is a list of skills, knowledge and attitudes which modern business says it requires. We would like you to indicate to what extent the academic courses in your high school place emphasis on these qualities:

Strong emphasis	*Emphasis*	*Uncertain*	*little emphasis*	*No emphasis*
1	*2*	*3*	*4*	*5*

Communication Skills

	1	2	3	4	5
Understand and speak the language in which business is conducted.	☐	☐	☐	☐	☐
Listen to understand and learn.	☐	☐	☐	☐	☐
Read, comprehend and use written materials, including graphs, charts and displays.	☐	☐	☐	☐	☐
Write effectively in the language in which business is conducted.	☐	☐	☐	☐	☐

Thinking Skills

	1	2	3	4	5
Think critically and act logically.	☐	☐	☐	☐	☐
The ability to evaluate and to compare situations.	☐	☐	☐	☐	☐
Decision making ability.	☐	☐	☐	☐	☐
Problem solving ability and understanding.	☐	☐	☐	☐	☐
Access and apply specialised knowledge from various fields.	☐	☐	☐	☐	☐
The ability to solve problems involving mathematics and use the results.	☐	☐	☐	☐	☐
The ability to research in different ways.	☐	☐	☐	☐	☐
The ability to analyse statistical data creatively.	☐	☐	☐	☐	☐

Positive Attitudes and Behaviours

	1	2	3	4	5
Self-esteem and confidence.	☐	☐	☐	☐	☐
Honesty, integrity and personal ethics.	☐	☐	☐	☐	☐
A positive attitude toward learning, growth and personal health.	☐	☐	☐	☐	☐
Initiative, energy and persistence to get the job done.	☐	☐	☐	☐	☐

Responsibility

	1	2	3	4	5
The ability to set goals and priorities in work and personal life.	☐	☐	☐	☐	☐
The ability to plan and manage time, money and other resources to achieve goals.	☐	☐	☐	☐	☐
Accountability for actions taken.	☐	☐	☐	☐	☐

Adaptability and Flexibility

	1	2	3	4	5
A positive attitude toward change.	☐	☐	☐	☐	☐
Recognition of and respect for people's diversity and individual differences.	☐	☐	☐	☐	☐
The ability to identify and suggest new ideas to get the job done creatively.	☐	☐	☐	☐	☐
The ability to work in different situations.	☐	☐	☐	☐	☐
The ability to work with new tools, instruments and in new situations.	☐	☐	☐	☐	☐
Use technology and information systems effectively.	☐	☐	☐	☐	☐

Team Work Skills

	1	2	3	4	5
Understand and contribute to group or organisational goals.	☐	☐	☐	☐	☐
The ability to plan and take decisions with others and support the outcomes.	☐	☐	☐	☐	☐
Understand and work within the culture of the group.	☐	☐	☐	☐	☐
Respect the thoughts and opinions of others in the group.	☐	☐	☐	☐	☐
Exercise "give and take" to achieve group results.	☐	☐	☐	☐	☐
Seek a team approach as appropriate.	☐	☐	☐	☐	☐
Group leadership skills for high performance.	☐	☐	☐	☐	☐

(In the following questions please TICK the correct box)

2. Do you think that there should be a connection between the needs of labour market and the high school curriculum?

completely☐ to a large extent☐ uncertain☐ to a little extent☐ not at all☐

3. Do you think that curriculum policy makers have taken into account the labour market needs of the economy in designing the present high school curriculum?

completely☐ to a large extent☐ uncertain☐ to a little extent☐ not at all☐

4. Do you think that industrialists should be involved in designing the high school curriculum?

completely☐ to a large extent☐ uncertain☐ to a little extent☐ not at all☐

5. Do you think that the high school curriculum should be sensitive to local employment circumstances?

completely☐ to a large extent☐ uncertain☐ to a little extent☐ not at all☐

6. What do you think is the emphasis of the current high school curriculum?

Largely practical	☐
Mixture of practical and academic	☐
Largely academic	☐

7. Which high school curriculum, do you think the majority of the parents prefer?

Largely practical	☐
Mixture of practical and academic	☐
Largely academic	☐

8. Which high school curriculum, do you think the majority of the school governors prefer?

Largely practical	☐
Mixture of practical and academic	☐
Largely academic	☐

9. Which high school curriculum, do you think the majority of the teachers prefer?

Largely practical	☐
Mixture of practical and academic	☐
Largely academic	☐

10. Which high school curriculum, do you think the majority of the students prefer?

Largely practical	☐
Mixture of practical and academic	☐
Largely academic	☐

11. What sort of curriculum, do you think would maximise the employment chances of students?

Vocational	☐
Academic	☐
Mixture of both	☐
No connection between curriculum and employment	☐

12. Do you think that there is any connection between the teaching methods used in the curriculum and the employment chances of pupils?

Very much	☐
A little	☐
Not at all	☐

13. How important do you think career education should be in the high school?

Very important☐ Important☐ Uncertain☐ Not impotant☐ Not iportant at all☐

14. To what extent do you think, schools use the career education and guidance services to help their students make career chances?

completely☐ to a large extent☐ uncertain☐ to a little extent☐ not at all☐

15. Which of the following statements accurately describes the current high school curriculum?

- The high school curriculum does not take into account the future employment needs of students.

Strongly agree☐ Agree☐ Uncertain☐ Disagree☐ Strongly disagree☐

- The high school's methods of teaching are not appropriate for the future employment needs of students.

Strongly agree☐ Agree☐ Uncertain☐ Disagree☐ Strongly disagree☐

- The high school curriculum is not adequately resourced.

Strongly agree☐ Agree☐ Uncertain☐ Disagree☐ Strongly disagree☐

- The elements of the high school curriculum are not sufficiently integrated.

Strongly agree☐ Agree☐ Uncertain☐ Disagree☐ Strongly disagree☐

- The world of work is not emphasised sufficiently in the high school curriculum.

Strongly agree☐ Agree☐ Un☐ Disagree☐ Strongly disagree☐

- The high school curriculum is too concerned with the development of theoretical rather than practical knowledge.

Strongly agree☐ Agree☐ Uncertain☐ Disagree☐ Strongly disagree☐

- The practical elements of the high school curriculum are not taught in conjunction with local industry.

Strongly agree☐ Agree☐ Uncertain☐ Disagree☐ Strongly disagree☐

16. Which of the following factors do you think affect the employment chances of high school graduates?
(Please tick the appropriate box)

Strongly agree	*Agree*	*Uncertain*	*Disagre*	*Strongly disagree*
1	*2*	*3*	*4*	*5*

	1	2	3	4	5
The gap between school courses and the needs of work.	☐	☐	☐	☐	☐

Lack of appropriate occupational guidance and counselling.	☐	☐	☐	☐	☐
Lack of practical and applied knowledge in the curriculum.	☐	☐	☐	☐	☐
Lack of training and internship for pupils.	☐	☐	☐	☐	☐
Lack of emphasise on the significance of work in socio-economic development during their courses.	☐	☐	☐	☐	☐
Lack of opportunity for seeing and understanding the variety of occupations in society.	☐	☐	☐	☐	☐
The failure of school management and teachers to use local opportunities for connecting education and work.	☐	☐	☐	☐	☐
Ignoring employer's opinions and suggestions about the curriculum.	☐	☐	☐	☐	☐
Insufficient investment in the education-industry relationship to provide required facilities in this field.	☐	☐	☐	☐	☐
Belief that academic courses are more useful than vocational courses.	☐	☐	☐	☐	☐
Failure to take into account local needs and workplace requirements in the curriculum.	☐	☐	☐	☐	☐

17. Which of the following approaches are appropriate for the preparation of secondary school pupils so they can meet more effectively the demands of their future work life? *(Please tick the appropriate box)*

Strongly agree	*Agree*	*Uncertain*	*Disagre*	*Strongly disagree*
1	*2*	*3*	*4*	*5*

	1	2	3	4	5
To emphasise the essential values, knowledge and skills relating to work	☐	☐	☐	☐	☐
To allocate enough time and resources for introducing with work and its different effects.	☐	☐	☐	☐	☐
To emphasise training and internship in all courses.	☐	☐	☐	☐	☐
To emphasise flexible and applied skills and knowledge.	☐	☐	☐	☐	☐
To establish annual exhibitions in various industrial fields where students can learn more about the industry and the jobs it offers.	☐	☐	☐	☐	☐
To visit industry and trade centres regularly.	☐	☐	☐	☐	☐
To decentralise curriculum development.	☐	☐	☐	☐	☐

To participate with employers in developing the high school curriculum.	☐	☐	☐	☐	☐
To emphasise team work in school.	☐	☐	☐	☐	☐
To providing suitable opportunities for teachers to introduce workplace situations.	☐	☐	☐	☐	☐
To facilitate relations between school and other institutions by reforming management systems.	☐	☐	☐	☐	☐
To emphasise quality management for developing approaches in these fields.	☐	☐	☐	☐	☐
To evaluate the curriculum in order to continuously improve goals and standards.	☐	☐	☐	☐	☐
To use educational technology: TV, video, in teaching practical subjects.	☐	☐	☐	☐	☐
To use occupational guidance and counsulting services in school.	☐	☐	☐	☐	☐
To emphasise careers education.	☐	☐	☐	☐	☐
To establish the office of partnership with industry in schools.	☐	☐	☐	☐	☐

If you should have any additional comments or suggestions which relate to this research please mention them here.

Thank you for completing and returning this questionnaire

Persian Version:

UNIVERSITY OF BATH

Professor J Calderhead
Professor I M Jamieson
Professor J J Thompson CBE

School of Education
Bath BA2 7AY · United Kingdom
Telephone 01225 826826
Facsimile 01225 826113

بسم الله الرحمن الرحیم

همکار گرامی

ضمن اهداء سلام و آرزوی توفیق جنابعالی، پرسشنامه ای که در پیش و رو دارید مربوط به رساله دکترای اینجانب است که به بررسی نقاط ضعف و قوت نظام برنامه ریزی درسی در مقطع متوسطه می پردازد. بحث اساسی در این تحقیق بررسی چگونگی ارتباط برنامه های درسی با شرایط، مشخصات و نیازمندیهای بازار کار و فرصتهای اشتغال در جامعه است. همانطور که مستحضر هستید مسئله بیکاری جوانان در خیلی از جوامع ناشی از عوامل مختلفی نظیر مسائل و نارسائی های اقتصادی، سیاسی، جمعیتی، فرهنگی و آموزشی است. از جمله عوامل و درون سیستمی مهم نظام آموزشی که به افزایش یا کاهش مسئله بیکاری فارغ التحصیلان متوسطه منجر می شود، بحث میزان تناسب برنامه های درسی دوره متوسطه با نیازهای بازار کار است.

یکی از مسائل موجود در این زمینه نامناسب و ناهماهنگ بودن توانائیها و مهارتهای جوانان دیپلمه ها با آنچه که صنایع، مؤسسات و سایر مراکز خدماتی و اداری انتظار دارند، است. بنابراین این تحقیق می کوشد ضمن بررسی وضعیت برنامه های درسی فعلی مدارس متوسطه ازجنبه های مختلف، مدلی را ترسیم کند که در آن به هماهنگی و ارتباط نظام آموزشی با زمینه اقتصادی و مشخصات نیروی انسانی مورد نیاز آن توجه اساسی می شود. این مهم بدون همفکری با شما که سالها در تماس مستقیم با برنامه های درسی بوده و به نقاط ضعف و قوت آن وقوف داشته و از طرفی هم از نیازها و خصوصیات و علائق دانش آموزان این دوره نیز آگاهی دارید، غیر ممکن مینماید. لذا استدعا دارد نسبت به تعمق و تکمیل این پرسشنامه و بیان نظرات و تجربیات خویش اینجانب را یاری نمائید. قبلا" از زحمات متحمله تشکر و تقدیر بعمل می آید.

من الله التوفیق

نعمت الله عزیزی

فروردین ۷۵

پرسشنامه تحقیقی

بخش اول: اطلاعات شخصی

لطفا" جواب مناسب هر یک از سؤالات زیر را بنویسید یا علامت بزنید.

جنسیت: مذکر☐ مؤنث☐

سن: ۲۱-۳۰☐ ۳۱-۴۰☐ ۴۱-۵۰☐ ۵۱-۶۰☐ ۶۰ به بالا☐

مدرک تحصیلی: دیپلم☐ لیسانس☐ فوق لیسانس☐ سایر مدارک☐ لطفا" نام ببرید.....

رشته تحصیلی:..... دروس اصلی تدریس:.....

سابقه تدریس: ۰-۴☐ ۵-۹☐ ۱۰-۱۴☐ ۱۵-۱۹☐ ۲۰-۲۴☐ ۲۵-۳۰☐ ۳۰ به بالا☐

وضعیت شغلی در مدرسه: فقط تدریس☐ مدیریت مدرسه☐ سایر موارد☐ لطفا" نام ببرید.....

بخش دوم : سؤالات اصلی تحقیق

۱. عبارات زیر لیستی از رفتارها، توانائی ها و مهارتهائی هستند که بر اساس نتایج تحقیقات و نظر صاحبنظران مسائل آموزشی، چنانچه در خلال برنامه ها و دوره تحصیلی آموزش متوسطه مورد توجه و تأکید قرار داده شوند، در اشتغال فارغ التحصیلان مدارس متوسطه تأثیر بسزائی دارند. بنظر شما نظام آموزش متوسطه کشور در برنامه های درسی دوره متوسطه چگونه و تا چه اندازه بر این مهارتها و توانائی ها توجه می کند؟ لطفا" جواب مناسب را از میان یکی از کیفیت های مقابل هر سؤال انتخاب و مشخص نمائید.

مهارتهای ارتباطی:

	خیلی زیاد	زیاد	نمیدانم	کم	خیلی کم
- مهارت فهمیدن و شرح دادن موضوعات.	☐	☐	☐	☐	☐
- مهارت گوش دادن فعال برای فهم و یادگیری بهتر.	☐	☐	☐	☐	☐
- مهارت خواندن و تحلیل مواد کتبی، نمودارها و چارتها.	☐	☐	☐	☐	☐
- مهارت نوشتن متناسب با سطح تحصیلات.	☐	☐	☐	☐	☐

مهارتهای تفکر

- توانائی تفکر منطقی و خلاق.	☐	☐	☐	☐	☐
- توانائی ارزشیابی و مقایسه موقعیت های مختلف.	☐	☐	☐	☐	☐

	خیلی زیاد	زیاد	نمیدانم	کم	خیلی کم
– توانائی و مهارت در اتخاذ تصمیمات بجا و موثر.	❑	❑	❑	❑	❑
– توانائی استفاده از روش حل مسأله در برخورد با مسائل.	❑	❑	❑	❑	❑
– توانائی کسب دانش و معلومات مورد نیاز از منابع و زمینه های مختلف.	❑	❑	❑	❑	❑
– توانائی حل مسائل و معادلات ریاضی و استفاده از نتایج آن.	❑	❑	❑	❑	❑
– توانائی استفاده از روشهای مختلف تحقیق در امور مربوطه.	❑	❑	❑	❑	❑
– توانائی استفاده و تحلیل داده ها و اطلاعات آماری.	❑	❑	❑	❑	❑

رفتار ها و نگرش های مثبت

– برخورداری از حس اعتماد به نفس در انجام امور.	❑	❑	❑	❑	❑
– اعتقاد به درستی و امانتداری و همسو کردن رفتارها با مبانی اخلاقی.	❑	❑	❑	❑	❑
– داشتن نگرشی مثبت نسبت به رشد شخصی و بهداشت فردی و اجتماعی.	❑	❑	❑	❑	❑
– داشتن آمادگی و انرژی در تقبل امور و استمرار در انجام آن.	❑	❑	❑	❑	❑

مسئولیت پذیری

– توانائی در تعیین اهداف و اولویتها برای کار و زندگی شخصی.	❑	❑	❑	❑	❑
– توانائی برنامه ریزی و کنترل صحیح امکانات موجود برای نیل به هدف.	❑	❑	❑	❑	❑
– توانائی پاسخگوئی و ارائه دلایل منطقی در مقابل اقدامات انجام شده.	❑	❑	❑	❑	❑

توانائی سازگاری و انعطاف پذیری

– داشتن نگرشی مثبت نسبت به تغییرات احتمالی در کار و شرایط اجتماعی.	❑	❑	❑	❑	❑
– شناخت و احترام به تمایلات شخصی و خصوصیات فردی افراد.	❑	❑	❑	❑	❑
– توانائی تشخیص و ارائه نظرات و روشهای جدید برای انجام بهتر کار.	❑	❑	❑	❑	❑
– توانائی انجام کار در شرایط متفاوت.	❑	❑	❑	❑	❑
– توانائی کار با ابزار ، وسایل و شرایط جدید.	❑	❑	❑	❑	❑
– توانائی استفاده موثر از سیستمهای اطلاعات و تکنولوژی جدید.	❑	❑	❑	❑	❑

مهارتهای کار گروهی

– توانائی درک اهداف گروهی یا سازمانی و مشارکت در تحقق آنها.	❑	❑	❑	❑	❑
– توانائی برنامه ریزی و تصمیم گیری با دیگران و حمایت ازنتایج آنها.	❑	❑	❑	❑	❑
– توانائی درک فرهنگ گروهی و انجام فعالیت در آن.	❑	❑	❑	❑	❑
– رعایت احترام به تجارب و عقاید دیگران در گروه.	❑	❑	❑	❑	❑
– توانائی تبادل افکار و تجربیات در گروه برای نیل به نتایج بهتردر کار.	❑	❑	❑	❑	❑

	خیلی زیاد	زیاد	نمیدانم	کم	خیلی کم
– یافتن روشهای مناسب، کار گروهی جهت تحقق معیارهای مورد نظر.	❑	❑	❑	❑	❑
– توانائی و مهارت در رهبری گروه برای ارتقاء اهداف و عملکرد آن.	❑	❑	❑	❑	❑

۲. بنظر شما ضرورت مرتبط کردن برنامه های تحصیلی دانش آموزان دوره متوسطه با شرایط و نیازمندیهای بازار کار چگونه باید باشد؟

مطلقا" ضروری است❑ ضروری است❑ نمیدانم❑ ضروری نیست❑ اصلا" ضروری نیست❑

۳. بنظر شما برنامه ریزان درسی در تدوین برنامه های تحصیلی فعلی دوره متوسطه تا چه اندازه به مشخصات نیروی انسانی مورد نیاز اقتصاد و صنعت کشور توجه کرده اند؟

خیلی زیاد ❑ زیاد❑ نمیدانم❑ کم❑ خیلی کم❑

٤. بنظر شما ضرورت مشارکت دست اندرکاران مسائل اقتصادی ، صنعتی و کارفرمایان در تدوین و طراحی برنامه های درسی دوره متوسطه چگونه باید باشد؟

مطلقا" ضروری است❑ ضروری است❑ نمیدانم❑ ضروری نیست❑ اصلا" ضروری نیست❑

٥. بنظر شما ضرورت توجه به نیازمندیهای شغلی محلی و منطقه ای در برنامه های درسی چگونه باید باشد؟

مطلقا" ضروری است❑ ضروری است❑ نمیدانم❑ ضروری نیست❑ اصلا" ضروری نیست❑

٦. بنظر شما برنامه های درسی دوره متوسطه بر کدامیک از عناصر زیر تأکید می کند؟

الف. بیشتر بر مفاهیم و مهارتهای کاربردی وعملی❑

ب. بر ترکیبی از مفاهیم و مهارتهای نظری و کاربردی❑

ج. بیشتر بر مفاهیم نظری و تئوری❑

۷. بنظر شما کدامیک از اشکال برنامه های درسی زیر از نظر اکثر والدین دانش آموزان مناسبتر است؟

الف. برنامه هائی که بیشتر عملی باشد.❑

ب. برنامه هائی که در بر گیرنده هم فعالیتهای عملی و نظری باشد.❑

ج. برنامه هائی که بیشتر نظری و علمی باشد.❑

۸. بنظر شما کدامیک از اشکال برنامه های درسی زیر از نظر اکثر مدیران مدارس متوسطه مناسبتر است؟

الف. برنامه هائی که بیشتر عملی باشد.❑

ب. برنامه هائی که در بر گیرنده هم فعالیتهای عملی و نظری باشد.❑

ج. برنامه هائی که بیشتر نظری و علمی باشد.❑

۹. بنظر شما کدامیک از اشکال برنامه های درسی زیر از نظر اکثر معلمان مدارس متوسطه مناسبتر است؟

الف. برنامه هائی که بیشتر عملی باشد. ❑

ب. برنامه هائی که در بر گیرنده هم فعالیتهای عملی و نظری باشد. ❑

ج. برنامه هائی که بیشتر نظری و علمی باشد. ❑

۱۰. بنظر شما کدامیک از اشکال برنامه های درسی زیر از نظر اکثر دانش آموزان مناسبتر است؟

الف. برنامه هائی که بیشتر عملی باشد. ❑

ب. برنامه هائی که در بر گیرنده هم فعالیتهای عملی و نظری باشد. ❑

ج. برنامه هائی که بیشتر نظری و علمی باشد. ❑

۱۱. بنظر شما کدامیک از اشکال برنامه های درسی زیر از نظر اکثر کارفرمایان مناسبتر است؟

الف. برنامه هائی که بیشتر عملی باشد. ❑

ب. برنامه هائی که در بر گیرنده هم فعالیتهای عملی و نظری باشد. ❑

ج. برنامه هائی که بیشتر نظری و علمی باشد. ❑

۱۲. بنظر شما ماهیت برنامه درسی در دوره متوسطه تا چه اندازه به معلمین در انتخاب آندسته از روشهای تدریس که مستلزم برقراری رابطه و استفاده از امکانات مراکز شغلی است، اختیار می دهد؟

خیلی زیاد ❑ زیاد ❑ نمیدانم ❑ کم ❑ خیلی کم ❑

۱۳. شما اهمیت و ضرورت آموزشهای شغلی–حرفه ای در مدارس متوسطه را چگونه ارزیابی می کنید؟

مطلقا" ضروری است ❑ ضروری است ❑ نمیدانم ❑ ضروری نیست ❑ اصلا" ضروری نیست ❑

۱٤. بنظر شما در مدارس متوسطه تا چه حد از آموزشها و راهنمائی شغلی–حرفه ای برای کمک به دانش آموزان استفاده می شود؟

خیلی زیاد ❑ زیاد ❑ نمیدانم ❑ کم ❑ خیلی کم ❑

۱۵. بنظر شما کدامیک از بیانات زیر بدرستی و بدقت برنامه درسی مدارس متوسطه را توصیف میکند؟

– برنامه درسی ایندوره به نیازهای شغلی آینده دانش آموزان توجهی ندارد.

کاملا" موافقم ❑ موافقم ❑ نمیدانم ❑ مخالفم ❑ کاملا" مخالفم ❑

– روشهای تدریس در ایندوره با نیازهای شغلی دانش آموزان ارتباطی ندارد.

کاملا" موافقم ❑ موافقم ❑ نمیدانم ❑ مخالفم ❑ کاملا" مخالفم ❑

– برنامه درسی در اینلوره بطور کافی مورد حمایت علمی و تحقیقی قرار ندارد.

کاملا" موافقم ❑ موافقم ❑ نمیدانم ❑ مخالفم ❑ کاملا" مخالفم❑

– عناصر برنامه های درسی در اینلوره بطور مناسبی با هم ارتباط وهماهنگی ندارند.

کاملا" موافقم ❑ موافقم ❑ نمیدانم ❑ مخالفم ❑ کاملا" مخالفم❑

– در برنامه های درسی اینلوره به اهمیت کار و روحیه کارپروری توجه کافی نشده است.

کاملا" موافقم ❑ موافقم ❑ نمیدانم ❑ مخالفم ❑ کاملا" مخالفم❑

– در برنامه های درسی تأکید زیادی بر دانش نظری و تئوری شده تا بر مهارتهاو دانش عملی.

کاملا" موافقم ❑ موافقم ❑ نمیدانم ❑ مخالفم ❑ کاملا" مخالفم❑

– عناصر عملی برنامه درسی را نمیتوان با استفاده از امکانات و منابع محلی آموزش داد.

کاملا" موافقم ❑ موافقم ❑ نمیدانم ❑ مخالفم ❑ کاملا" مخالفم❑

۱۶. بنظر شما کدامیک از عوامل زیر که به نظام آموزشی و ماهیت برنامه های درسی مربوط می شود، بر مسأله اشتغال فارغ التحصیلان دوره متوسطه تأثیر می گذارد و تا چه اندازه؟

	خیلی زیاد	زیاد	نمیدانم	کم	خیلی کم
– شکاف بین رشته ها و دوره های تحصیلی و نیازهای مشاغل.	❑	❑	❑	❑	❑
– فقدان یک نظام کارا و مؤثر راهنمائی و مشاوره حرفه ای در دبیرستان.	❑	❑	❑	❑	❑
– عدم توجه به دانشها و مهارتهای کاربردی و عملی در برنامه درسی.	❑	❑	❑	❑	❑
– فقدان یک سیستم مناسب کارآموزی و کارورزی برای دانش آموزان.	❑	❑	❑	❑	❑
– عدم تأکید بر نقش و اهمیت کار در توسعه اجتماعی و اقتصادی در خلال برنامه درسی.	❑	❑	❑	❑	❑
– عدم وجود امکانات و فرصت مناسب برای بررسی و مشاهده مشاغل مختلف در جامعه.	❑	❑	❑	❑	❑
– عدم توفیق مدیران و معلمان در استفاده از فرصتها و امکانات محلی برای مرتبط کردن آموزش با کار.	❑	❑	❑	❑	❑
– نادیده گرفتن نظرات ، تجربیات و پیشنهادات کارفرمایان راجع به برنامه درسی.	❑	❑	❑	❑	❑
– عدم تحقیق و پژوهش کافی راجع به رابطه آموزش و اشتغال، جهت تدارک تسهیلات لازم.	❑	❑	❑	❑	❑
– اعتقاد به اینکه تحصیلات نظری و آکادمیک با اهمیت تر و سودمندتر است از آموزشهای فنی-حرفه ای.	❑	❑	❑	❑	❑

	خیلی زیاد	زیاد	نمیدانم	کم	خیلی کم
– عدم توفیق در توجه و بررسی نیازها و شرایط اشتغال محلی و منطقه ای در برنامه های درسی.	☐	☐	☐	☐	☐

۱۷. بنظر شما در تدوین برنامه های درسی دوره متوسطه، تأکید بر کدامیک از روشها و عوامل زیر در آماده ساختن دانش آموزان دوره متوسطه برای حضور موفق در اشتغال آینده موثر خواهد بود و تا چه اندازه؟

	خیلی زیاد	زیاد	نمیدانم	کم	خیلی کم
– تأکید بر ارزشها، دانش و مهارتهای مرتبط به کار.	☐	☐	☐	☐	☐
– اختصاص زمان و منابع کافی برای معرفی نقش و آثار مختلف کار به دانش آموزان.	☐	☐	☐	☐	☐
– تأکید بر کارآموزی و کارورزی در همه رشته ها و دوره های دبیرستانی.	☐	☐	☐	☐	☐
– تأکید بر مهارتها و توانائی های عملی و انعطاف پذیر در برنامه درسی.	☐	☐	☐	☐	☐
– برگزاری کارگاههای (نمایشگاه) سالانه کارآموزی در زمینه ها ومشاغل مختلف که دانش آموزان بتوانند بیشتر راجع به مشاغل بیاموزند.	☐	☐	☐	☐	☐
– تدارک بازدیدهای منظم از مراکز صنعتی، خدماتی و اداری برای محصلین.	☐	☐	☐	☐	☐
– تأکید بر غیر متمرکز نمودن برنامه ریزی درسی.	☐	☐	☐	☐	☐
– مشارکت دادن کارفرمایان در تدوین و طراحی برنامه های درسی.	☐	☐	☐	☐	☐
– تأکید بر روحیه کار گروهی در فعالیتهای آموزشی و تدریس.	☐	☐	☐	☐	☐
– تدارک فرصتهای مناسب برای معلمین در جهت آشنائی آنان با موقعیتهای واقعی کار.	☐	☐	☐	☐	☐
– تسهیل روابط مدرسه با سایر مؤسسات از طریق اصلاح شیوه های مدیریت آموزشی.	☐	☐	☐	☐	☐
– تأکید بر شیوه مدیریت کیفیت برای بهبود روشها و وسایل موجود در مرتبط نمودن فعالیتهای مدرسه با کار.	☐	☐	☐	☐	☐
– تدوین یک سیستم کارا و مداوم ارزشیابی از برنامه درسی جهت بهبود اهداف و استانداردهای مربوطه.	☐	☐	☐	☐	☐
– تأکید بر استفاده از خدمات تکنولوژی آموزشی در تدریس دروس و مواد عملی برنامه.	☐	☐	☐	☐	☐
– تأکید بر استفاده از خدمات راهنمائی و مشاوره برای هدایت بهتر دانش آموزان در جهت فرصتهای موجود اشتغال.	☐	☐	☐	☐	☐
– تأکید بر آموزشهای شغلی در مدرسه.	☐	☐	☐	☐	☐
– تأسیس دفتر ارتباط با اشتغال در مدرسه.	☐	☐	☐	☐	☐
– تأکید بر نقش ها و مسئولیتهای فردی و اجتماعی افراد که برای رشد و توسعه جامعه ضرورینند.	☐	☐	☐	☐	☐

لطفا" اگر نظر یا پیشنهاد خاص دیگری در خصوص تحکیم رابطه نظام آموزشی و برنامه های درسی با شرایط

و نیازهای مشاغل که نهایتا" به بهبود وضعیت اشتغال فارغ التحصیلان مدارس متوسطه کمک نماید، در زیر شرح دهید. مجددا" از همکاری و عنایت شما در پر کردن این پرسشنامه کمال تشکر و امتنان را دارد.

Appendix 5.2

School of Education
University of Bath
(Student Questionnaire)

Dear student:

This questionnaire is a part of my research work at the University of Bath (U.K). I should be grateful if you could spare the time to complete and return it. Your responses will be treated confidentially.

The purpose of my research is to investigate people's idea about the problems and weaknesses of high school curriculum in relating to the relationship between education system and employment in Iran, in particular, the ways in which school curriculum might link to labour market needs.

Part A: personal Details

Gender: ☐Male ☐Female

Marital status: ☐Single ☐Married

Age: .....

Field of study.....

Year of study: ☐First year ☐Second year ☐Third year ☐Fourth year

Type of secondary school which been graduated from:

☐Academic secondary school ☐Technical & vocational school ☐Teacher training college

☐Others form of graduation(please speccify).....

Employment experiences:.....

Part B: main questions

1. Here is a list of skills, knowledge and attitudes which modern business says it requires. We would like you to indicate to what extent the academic courses in your high school place emphasis on these qualities:

Strong emphasis	*Emphasis*	*Uncertain*	*little emphasis*	*No emphasis*
1	*2*	*3*	*4*	*5*

Communication Skills

	1	2	3	4	5
Understand and speak the language in which business is conducted.	☐	☐	☐	☐	☐
Listen to understand and learn.	☐	☐	☐	☐	☐
Read, comprehend and use written materials, including graphs, charts and displays.	☐	☐	☐	☐	☐
Write effectively in the language in which business is conducted.	☐	☐	☐	☐	☐

Thinking Skills

	1	2	3	4	5
Think critically and act logically.	☐	☐	☐	☐	☐
The ability to evaluate and to compare situations.	☐	☐	☐	☐	☐
Decision making ability.	☐	☐	☐	☐	☐
Problem solving ability and understanding.	☐	☐	☐	☐	☐
Access and apply specialised knowledge from various fields.	☐	☐	☐	☐	☐
The ability to solve problems involving mathematics and use the results.	☐	☐	☐	☐	☐
The ability to research in different ways.	☐	☐	☐	☐	☐
The ability to analyse statistical data creatively.	☐	☐	☐	☐	☐

Positive Attitudes and Behaviours

	1	2	3	4	5
Self-esteem and confidence.	☐	☐	☐	☐	☐
Honesty, integrity and personal ethics.	☐	☐	☐	☐	☐
A positive attitude toward learning, growth and personal health.	☐	☐	☐	☐	☐
Initiative, energy and persistence to get the job done.	☐	☐	☐	☐	☐

Responsibility

	1	2	3	4	5
The ability to set goals and priorities in work and personal life.	☐	☐	☐	☐	☐
The ability to plan and manage time, money and other resources to achieve goals.	☐	☐	☐	☐	☐
Accountability for actions taken.	☐	☐	☐	☐	☐

Adaptability and Flexibility

	1	2	3	4	5
A positive attitude toward change.	☐	☐	☐	☐	☐
Recognition of and respect for people's diversity and individual differences.	☐	☐	☐	☐	☐
The ability to identify and suggest new ideas to get the job done creatively.	☐	☐	☐	☐	☐
The ability to work in different situations.	☐	☐	☐	☐	☐
The ability to work with new tools, instruments and in new situations.	☐	☐	☐	☐	☐
Use technology and information systems effectively.	☐	☐	☐	☐	☐

Team Work Skills

	1	2	3	4	5
Understand and contribute to group or organisational goals.	☐	☐	☐	☐	☐
The ability to plan and take decisions with others and support the outcomes.	☐	☐	☐	☐	☐
Understand and work within the culture of the group.	☐	☐	☐	☐	☐
Respect the thoughts and opinions of others in the group.	☐	☐	☐	☐	☐
Exercise "give and take" to achieve group results.	☐	☐	☐	☐	☐
Seek a team approach as appropriate.	☐	☐	☐	☐	☐
Group leadership skills for high performance.	☐	☐	☐	☐	☐

(In the following questions please TICK the correct box)

2. Do you think that there should be a connection between the needs of labour market and the high school curriculum?

completely☐ to a large extent☐ uncertain☐ to a little extent☐ not at all☐

3. Do you think that curriculum policy makers have taken into account the labour market needs of the economy in designing the present high school curriculum?

completely☐ to a large extent☐ uncertain☐ to a little extent☐ not at all☐

4. Do you think that industrialists should be involved in designing the high school curriculum?

completely☐ to a large extent☐ uncertain☐ to a little extent☐ not at all☐

5. Do you think that the high school curriculum should be sensitive to local employment circumstances?

completely☐ to a large extent☐ uncertain☐ to a little extent☐ not at all☐

6. What do you think is the emphasis of the current high school curriculum?

Largely practical	☐
Mixture of practical and academic	☐
Largely academic	☐

7. Which high school curriculum, do you think the majority of the parents prefer?

Largely practical	☐
Mixture of practical and academic	☐
Largely academic	☐

8. Which high school curriculum, do you think the majority of the school governors prefer?

Largely practical	☐
Mixture of practical and academic	☐
Largely academic	☐

9. Which high school curriculum, do you think the majority of the teachers prefer?

Largely practical	☐
Mixture of practical and academic	☐
Largely academic	☐

10. Which high school curriculum, do you think the majority of the students prefer?

Largely practical	☐
Mixture of practical and academic	☐
Largely academic	☐

11. What sort of curriculum, do you think would maximise the employment chances of students?

Vocational	☐
Academic	☐
Mixture of both	☐
No connection between curriculum and employment	☐

12. Do you think that there is any connection between the teaching methods used in the curriculum and the employment chances of pupils?

Very much	☐
A little	☐
Not at all	☐

13. How important do you think career education should be in the high school?

Very important☐ Important☐ Uncertain☐ Not impotant☐ Not iportant at all☐

14. To what extent do you think, schools use the career education and guidance services to help their students make career chances?

completely☐ to a large extent☐ uncertain☐ to a little extent☐ not at all☐

15. Which of the following statements accurately describes the current high school curriculum?

- The high school curriculum does not take into account the future employment needs of students.

Strongly agree☐ Agree☐ Uncertain☐ Disagree☐ Strongly disagree☐

- The high school's methods of teaching are not appropriate for the future employment needs of students.

Strongly agree☐ Agree☐ Uncertain☐ Disagree☐ Strongly disagree☐

- The high school curriculum is not adequately resourced.

Strongly agree☐ Agree☐ Uncertain☐ Disagree☐ Strongly disagree☐

- The elements of the high school curriculum are not sufficiently integrated.

Strongly agree☐ Agree☐ Uncertain☐ Disagree☐ Strongly disagree☐

- The world of work is not emphasised sufficiently in the high school curriculum.

Strongly agree☐ Agree☐ Uncertain☐ Disagree☐ Strongly disagree☐

- The high school curriculum is too concerned with the development of theoretical rather than practical knowledge.

Strongly agree☐ Agree☐ Uncertain☐ Disagree☐ Strongly disagree☐

- The practical elements of the high school curriculum are not taught in conjunction with local industry.

Strongly agree☐ Agree☐ Uncertain☐ Disagree☐ Strongly disagree☐

16. Which of the following factors do you think affect the employment chances of high school graduates?
(Please tick the appropriate box)

Strongly agree	*Agree*	*Uncertain*	*Disagre*	*Strongly disagree*
1	*2*	*3*	*4*	*5*

	1	2	3	4	5
The gap between school courses and the needs of work.	☐	☐	☐	☐	☐

Lack of appropriate occupational guidance and counselling.	☐	☐	☐	☐	☐
Lack of practical and applied knowledge in the curriculum.	☐	☐	☐	☐	☐
Lack of training and internship for pupils.	☐	☐	☐	☐	☐
Lack of emphasise on the significance of work in socio-economic development during their courses.	☐	☐	☐	☐	☐
Lack of opportunity for seeing and understanding the variety of occupations in society.	☐	☐	☐	☐	☐
The failure of school management and teachers to use local opportunities for connecting education and work.	☐	☐	☐	☐	☐
Ignoring employer's opinions and suggestions about the curriculum.	☐	☐	☐	☐	☐
Insufficient investment in the education-industry relationship to provide required facilities in this field.	☐	☐	☐	☐	☐
Belief that academic courses are more useful than vocational courses.	☐	☐	☐	☐	☐
Failure to take into account local needs and workplace requirements in the curriculum.	☐	☐	☐	☐	☐

17. Which of the following approaches are appropriate for the preparation of secondary school pupils so they can meet more effectively the demands of their future work life? *(Please tick the appropriate box)*

Strongly agree	*Agree*	*Uncertain*	*Disagre*	*Strongly disagree*
1	*2*	*3*	*4*	*5*

	1	2	3	4	5
To emphasise the essential values, knowledge and skills relating to work	☐	☐	☐	☐	☐
To allocate enough time and resources for introducing with work and its different effects.	☐	☐	☐	☐	☐
To emphasise training and internship in all courses.	☐	☐	☐	☐	☐
To emphasise flexible and applied skills and knowledge.	☐	☐	☐	☐	☐
To establish annual exhibitions in various industrial fields where students can learn more about the industry and the jobs it offers.	☐	☐	☐	☐	☐
To visit industry and trade centres regularly.	☐	☐	☐	☐	☐
To decentralise curriculum development.	☐	☐	☐	☐	☐

To participate with employers in developing the high school curriculum.	☐	☐	☐	☐	☐
To emphasise team work in school.	☐	☐	☐	☐	☐
To providing suitable opportunities for teachers to introduce workplace situations.	☐	☐	☐	☐	☐
To facilitate relations between school and other institutions by reforming management systems.	☐	☐	☐	☐	☐
To emphasise quality management for developing approaches in these fields.	☐	☐	☐	☐	☐
To evaluate the curriculum in order to continuously improve goals and standards.	☐	☐	☐	☐	☐
To use educational technology: TV, video, in teaching practical subjects.	☐	☐	☐	☐	☐
To use occupational guidance and counsulting services in school.	☐	☐	☐	☐	☐
To emphasise careers education.	☐	☐	☐	☐	☐
To establish the office of partnership with industry in schools.	☐	☐	☐	☐	☐

If you should have any additional comments or suggestions which relate to this research please mention them here.

Thank you for completing and returning this questionnaire

Persian Version:

UNIVERSITY OF BATH

Professor J Calderhead
Professor I M Jamieson
Professor J J Thompson CBE

School of Education
Bath BA2 7AY · United Kingdom
Telephone 01225 826826
Facsimile 01225 826113

بسم الله الرحمن الرحیم

دانشجوی گرامی

ضمن اهداء سلام و آرزوی توفیق جنابعالی، پرسشنامه ای که در پیش رو دارید مربوط به رساله دکترای اینجانب است که به بررسی نقاط ضعف و قوت نظام برنامه ریزی درسی در مقطع متوسطه می پردازد. بحث اساسی در این تحقیق بررسی چگونگی ارتباط برنامه های درسی با شرایط، مشخصات و نیازمندیهای بازار کار و فرصتهای اشتغال در جامعه است. همانطور که مستحضر هستید مسئله بیکاری جوانان در خیلی از جوامع ناشی از عوامل مختلفی نظیر مسائل و نارسائی های اقتصادی، سیاسی، جمعیتی، فرهنگی و آموزشی است. از جمله عوامل و درون سیستمی مهم نظام آموزشی که به افزایش یا کاهش مسئله بیکاری فارغ التحصیلان متوسطه منجر می شود، بحث میزان تناسب برنامه های درسی دوره متوسطه با نیازهای بازار کار است.

یکی از مسائل موجود در این زمینه نامناسب و ناهماهنگ بودن توانائیها و مهارتهای جوانان دیپلمه ها با آنچه که صنایع، مؤسسات و سایر مراکز خدماتی و اداری انتظار دارند، است. بنابراین این تحقیق می کوشد ضمن بررسی وضعیت برنامه های درسی فعلی مدارس متوسطه ازجنبه های مختلف، مدلی را ترسیم کند که در آن به هماهنگی و ارتباط نظام آموزشی با زمینه اقتصادی و مشخصات نیروی انسانی مورد نیاز آن توجه اساسی می شود. این مهم بدون همفکری با شما که دوره متوسطه را تجربه نموده و هم با مزایا و معایب برنامه های درسی این دوره و هم با علائق و نیازها و مشکلات شغلی جوانان دانش آموزان آشنائی دارید، غیر ممکن مینماید. لذا استدعا دارد نسبت به تعمق و تکمیل این پرسشنامه و بیان نظرات و تجربیات خویش اینجانب را یاری نمائید. قبلا" از زحمات متحمله تشکر و تقدیر بعمل می آید.

من الله التوفیق

نعمت الله عزیزی

فروردین ۷۵

پرسشنامه تحقیقی

بخش اول: اطلاعات شخصی

لطفا" جواب مناسب هر یک از سؤالات زیر را بنویسید یا علامت بزنید.

جنسیت: مذکر ☐ مؤنث ☐ وضعیت تأهل: مجرد ☐ متأهل ☐

سن:.....

رشته تحصیلی:..... دانشجوی سال: اول ☐ دوم ☐ سوم ☐ چهارم ☐

محل اخذ مدرک دیپلم: دبیرستان ☐ هنرستان ☐ دانشسرای تربیت معلم ☐

بطور آزاد (متفرقه) ☐

سابقه اشتغال:..... زمینه اشتغال:.....

بخش دوم : سؤالات اصلی تحقیق

۱. عبارات زیر لیستی از رفتارها، توانائی ها و مهارتهائی هستند که بر اساس نتایج تحقیقات و نظر صاحبنظران مسائل آموزشی، چنانچه در خلال برنامه ها و دوره تحصیلی آموزش متوسطه مورد توجه و تأکید قرار داده شوند، در اشتغال فارغ التحصیلان مدارس متوسطه تأثیر بسزائی دارند. بنظر شما نظام آموزش متوسطه کشور در برنامه های درسی دوره متوسطه چگونه و تا چه اندازه بر این مهارتها و توانائی ها توجه می کند؟ لطفا" جواب مناسب را از میان یکی از کیفیت های مقابل هر سؤال انتخاب و مشخص نمائید.

مهارتهای ارتباطی:

	خیلی زیاد	زیاد	نمیدانم	کم	خیلی کم
– مهارت فهمیدن و شرح دادن موضوعات.	☐	☐	☐	☐	☐
– مهارت گوش دادن فعال برای فهم و یادگیری بهتر.	☐	☐	☐	☐	☐
– مهارت خواندن و تحلیل مواد کتبی، نمودارها و چارتها.	☐	☐	☐	☐	☐
– مهارت نوشتن متناسب با سطح تحصیلات.	☐	☐	☐	☐	☐

مهارتهای تفکر

– توانائی تفکر منطقی و خلاق.	☐	☐	☐	☐	☐
– توانائی ارزشیابی و مقایسه موقعیت های مختلف.	☐	☐	☐	☐	☐

	خیلی زیاد	زیاد	نمیدانم	کم	خیلی کم
– توانائی و مهارت در اتخاذ تصمیمات بجا و موثر.	❑	❑	❑	❑	❑
– توانائی استفاده از روش حل مسأله در برخورد با مسائل.	❑	❑	❑	❑	❑
– توانائی کسب دانش و معلومات مورد نیاز از منابع و زمینه های مختلف.	❑	❑	❑	❑	❑
– توانائی حل مسائل و معادلات ریاضی و استفاده از نتایج آن.	❑	❑	❑	❑	❑
– توانائی استفاده از روشهای مختلف تحقیق در امور مربوطه.	❑	❑	❑	❑	❑
– توانائی استفاده و تحلیل داده ها و اطلاعات آماری.	❑	❑	❑	❑	❑

رفتار ها و نگرش های مثبت

– برخورداری از حس اعتماد به نفس در انجام امور.	❑	❑	❑	❑	❑
– اعتقاد به درستی و امانتداری و همسو کردن رفتارها با مبانی اخلاقی.	❑	❑	❑	❑	❑
– داشتن نگرشی مثبت نسبت به رشد شخصی و بهداشت فردی و اجتماعی.	❑	❑	❑	❑	❑
– داشتن آمادگی و انرژی در تقبل امور و استمرار در انجام آن.	❑	❑	❑	❑	❑

مسئولیت پذیری

– توانائی در تعیین اهداف و اولویتها برای کار و زندگی شخصی.	❑	❑	❑	❑	❑
– توانائی برنامه ریزی و کنترل صحیح امکانات موجود برای نیل به هدف.	❑	❑	❑	❑	❑
– توانائی پاسخگوئی و ارائه دلایل منطقی در مقابل اقدامات انجام شده.	❑	❑	❑	❑	❑

توانائی سازگاری و انعطاف پذیری

– داشتن نگرشی مثبت نسبت به تغییرات احتمالی در کار و شرایط اجتماعی.	❑	❑	❑	❑	❑
– شناخت و احترام به تمایلات شخصی و خصوصیات فردی افراد.	❑	❑	❑	❑	❑
– توانائی تشخیص و ارائه نظرات و روشهای جدید برای انجام بهتر کار.	❑	❑	❑	❑	❑
– توانائی انجام کار در شرایط متفاوت.	❑	❑	❑	❑	❑
– توانائی کار با ابزار ، وسایل و شرایط جدید.	❑	❑	❑	❑	❑
– توانائی استفاده موثر از سیستمهای اطلاعات و تکنولوژی جدید.	❑	❑	❑	❑	❑

مهارتهای کار گروهی

– توانائی درک اهداف گروهی یا سازمانی و مشارکت در تحقق آنها.	❑	❑	❑	❑	❑
– توانائی برنامه ریزی و تصمیم گیری با دیگران و حمایت ازنتایج آنها.	❑	❑	❑	❑	❑
– توانائی درک فرهنگ گروهی و انجام فعالیت در آن.	❑	❑	❑	❑	❑
– رعایت احترام به تجارب و عقاید دیگران در گروه.	❑	❑	❑	❑	❑
– توانائی تبادل افکار و تجربیات در گروه برای نیل به نتایج بهتردر کار.	❑	❑	❑	❑	❑

	خیلی زیاد	زیاد	نمیدانم	کم	خیلی کم
– یافتن روشهای مناسب کار گروهی جهت تحقق معیارهای مورد نظر.	☐	☐	☐	☐	☐
– توانائی و مهارت در رهبری گروه برای ارتقاء اهداف و عملکرد آن.	☐	☐	☐	☐	☐

۲. بنظر شما ضرورت مرتبط کردن برنامه های تحصیلی دانش آموزان دوره متوسطه با شرایط و نیازمندیهای بازار کار چگونه باید باشد؟

مطلقا" ضروری است☐ ضروری است☐ نمیدانم☐ ضروری نیست☐ اصلا" ضروری نیست☐

۳. بنظر شما برنامه ریزان درسی در تدوین برنامه های تحصیلی فعلی دوره متوسطه تا چه اندازه به مشخصات نیروی انسانی مورد نیاز اقتصاد و صنعت کشور توجه کرده اند؟

خیلی زیاد ☐ زیاد☐ نمیدانم☐ کم☐ خیلی کم☐

٤. بنظر شما ضرورت مشارکت دست اندرکاران مسائل اقتصادی ، صنعتی و کارفرمایان در تدوین و طراحی برنامه های درسی دوره متوسطه چگونه باید باشد؟

مطلقا" ضروری است☐ ضروری است☐ نمیدانم☐ ضروری نیست☐ اصلا" ضروری نیست☐

٥. بنظر شما ضرورت توجه به نیازمندیهای شغلی محلی و منطقه ای در برنامه های درسی چگونه باید باشد؟

مطلقا" ضروری است☐ ضروری است☐ نمیدانم☐ ضروری نیست☐ اصلا" ضروری نیست☐

٦. بنظر شما برنامه های درسی دوره متوسطه بر کدامیک از عناصر زیر تأکید می کند؟

الف. بیشتر بر مفاهیم و مهارتهای کاربردی وعملی☐

ب. بر ترکیبی از مفاهیم و مهارتهای نظری و کاربردی☐

ج. بیشتر بر مفاهیم نظری و تئوری☐

۷. بنظر شما کدامیک از اشکال برنامه های درسی زیر از نظر اکثر والدین دانش آموزان مناسبتر است؟

الف. برنامه هائی که بیشتر عملی باشد.☐

ب. برنامه هائی که در بر گیرنده هم فعالیتهای عملی و نظری باشد.☐

ج. برنامه هائی که بیشتر نظری و علمی باشد.☐

۸. بنظر شما کدامیک از اشکال برنامه های درسی زیر از نظر اکثر مدیران مدارس متوسطه مناسبتر است؟

الف. برنامه هائی که بیشتر عملی باشد.☐

ب. برنامه هائی که در بر گیرنده هم فعالیتهای عملی و نظری باشد.☐

ج. برنامه هائی که بیشتر نظری و علمی باشد.☐

۹. بنظر شما کدامیک از اشکال برنامه های درسی زیر از نظر اکثر معلمان مدارس متوسطه مناسبتر است؟

الف. برنامه هائی که بیشتر عملی باشد. ❑

ب. برنامه هائی که در بر گیرنده هم فعالیتهای عملی و نظری باشد. ❑

ج. برنامه هائی که بیشتر نظری و علمی باشد. ❑

۱۰. بنظر شما کدامیک از اشکال برنامه های درسی زیر از نظر اکثر دانش آموزان مناسبتر است؟

الف. برنامه هائی که بیشتر عملی باشد. ❑

ب. برنامه هائی که در بر گیرنده هم فعالیتهای عملی و نظری باشد. ❑

ج. برنامه هائی که بیشتر نظری و علمی باشد. ❑

۱۱. بنظر شما کدامیک از اشکال برنامه های درسی زیر از نظر اکثر کارفرمایان مناسبتر است؟

الف. برنامه هائی که بیشتر عملی باشد. ❑

ب. برنامه هائی که در بر گیرنده هم فعالیتهای عملی و نظری باشد. ❑

ج. برنامه هائی که بیشتر نظری و علمی باشد. ❑

۱۲. بنظر شما ماهیت برنامه درسی در دوره متوسطه تا چه اندازه به معلمین در انتخاب آندسته از روشهای تدریس که مستلزم برقراری رابطه و استفاده از امکانات مراکز شغلی است، اختیار می دهد؟

خیلی زیاد ❑ زیاد ❑ نمیدانم ❑ کم ❑ خیلی کم ❑

۱۳. شما اهمیت و ضرورت آموزشهای شغلی–حرفه ای در مدارس متوسطه را چگونه ارزیابی می کنید؟

مطلقا" ضروری است ❑ ضروری است ❑ نمیدانم ❑ ضروری نیست ❑ اصلا" ضروری نیست ❑

۱۴. بنظر شما در مدارس متوسطه تا چه حد از آموزشها و راهنمائی شغلی–حرفه ای برای کمک به دانش آموزان استفاده می شود؟

خیلی زیاد ❑ زیاد ❑ نمیدانم ❑ کم ❑ خیلی کم ❑

۱۵. بنظر شما کدامیک از بیانات زیر بدرستی و بدقت برنامه درسی مدارس متوسطه را توصیف میکند؟

– برنامه درسی ایندوره به نیازهای شغلی آینده دانش آموزان توجهی ندارد.

کاملا" موافقم ❑ موافقم ❑ نمیدانم ❑ مخالفم ❑ کاملا" مخالفم ❑

– روشهای تدریس در ایندوره با نیازهای شغلی دانش آموزان ارتباطی ندارد.

کاملا" موافقم ❑ موافقم ❑ نمیدانم ❑ مخالفم ❑ کاملا" مخالفم ❑

– برنامه درسی در اینلوره بطور کافی مورد حمایت علمی و تحقیقی قرار ندارد.

کاملا" موافقم ❑ موافقم ❑ نمیدانم ❑ مخالفم ❑ کاملا" مخالفم❑

– عناصر برنامه های درسی در اینلوره بطور مناسبی با هم ارتباط وهماهنگی ندارند.

کاملا" موافقم ❑ موافقم ❑ نمیدانم ❑ مخالفم ❑ کاملا" مخالفم❑

– در برنامه های درسی اینلوره به اهمیت کار و روحیه کارپروری توجه کافی نشده است.

کاملا" موافقم ❑ موافقم ❑ نمیدانم ❑ مخالفم ❑ کاملا" مخالفم❑

– در برنامه های درسی تأکید زیادی بر دانش نظری و تئوری شده تا بر مهارتهاو دانش عملی.

کاملا" موافقم ❑ موافقم ❑ نمیدانم ❑ مخالفم ❑ کاملا" مخالفم❑

– عناصر عملی برنامه درسی را نمیتوان با استفاده از امکانات و منابع محلی آموزش داد.

کاملا" موافقم ❑ موافقم ❑ نمیدانم ❑ مخالفم ❑ کاملا" مخالفم❑

۱۶. بنظر شما کدامیک از عوامل زیر که به نظام آموزشی و ماهیت برنامه های درسی مربوط می شود، بر مسأله اشتغال فارغ التحصیلان دوره متوسطه تأثیر می گذارد و تا چه اندازه؟

	خیلی زیاد	زیاد	نمیدانم	کم	خیلی کم
– شکاف بین رشته ها و دوره های تحصیلی و نیازهای مشاغل.	❑	❑	❑	❑	❑
– فقدان یک نظام کارا و مؤثر راهنمائی و مشاوره حرفه ای در دبیرستان.	❑	❑	❑	❑	❑
– عدم توجه به دانشها و مهارتهای کاربردی و عملی در برنامه درسی.	❑	❑	❑	❑	❑
– فقدان یک سیستم مناسب کارآموزی و کارورزی برای دانش آموزان.	❑	❑	❑	❑	❑
– عدم تأکید بر نقش و اهمیت کار در توسعه اجتماعی و اقتصادی در خلال برنامه درسی.	❑	❑	❑	❑	❑
– عدم وجود امکانات و فرصت مناسب برای بررسی و مشاهده مشاغل مختلف در جامعه.	❑	❑	❑	❑	❑
– عدم توفیق مدیران و معلمان در استفاده از فرصتها و امکانات محلی برای مرتبط کردن آموزش با کار.	❑	❑	❑	❑	❑
– نادیده گرفتن نظرات ، تجربیات و پیشنهادات کارفرمایان راجع به برنامه درسی.	❑	❑	❑	❑	❑
– عدم تحقیق و پژوهش کافی راجع به رابطه آموزش و اشتغال، جهت تدارک تسهیلات لازم.	❑	❑	❑	❑	❑
– اعتقاد به اینکه تحصیلات نظری و آکادمیک با اهمیت تر و سودمندتر است از آموزشهای فنی–حرفه ای.	❑	❑	❑	❑	❑

	خیلی زیاد	زیاد	نمیدانم	کم	خیلی کم
– عدم توفیق در توجه و بررسی نیازها و شرایط اشتغال محلی و منطقه ای در برنامه های درسی.	☐	☐	☐	☐	☐

۱۷. بنظر شما در تدوین برنامه های درسی دوره متوسطه، تأکید بر کدامیک از روشها و عوامل زیر در آماده ساختن دانش آموزان دوره متوسطه برای حضور موفق دراشتغال آینده موثر خواهد بود و تا چه اندازه؟

	خیلی زیاد	زیاد	نمیدانم	کم	خیلی کم
– تأکید بر ارزشها، دانش و مهارتهای مرتبط به کار.	☐	☐	☐	☐	☐
– اختصاص زمان و منابع کافی برای معرفی نقش و آثار مختلف کار به دانش آموزان.	☐	☐	☐	☐	☐
– تأکید بر کارآموزی و کارورزی در همه رشته ها و دوره های دبیرستانی.	☐	☐	☐	☐	☐
– تأکید بر مهارتها و توانائی های عملی و انعطاف پذیر در برنامه درسی.	☐	☐	☐	☐	☐
– برگزاری کارگاههای (نمایشگاه) سالانه کارآموزی در زمینه ها ومشاغل مختلف که دانش آموزان بتوانند بیشتر راجع به مشاغل بیاموزند.	☐	☐	☐	☐	☐
– تدارک بازدیدهای منظم از مراکز صنعتی، خدماتی و اداری برای محصلین.	☐	☐	☐	☐	☐
– تأکید بر غیر متمرکز نمودن برنامه ریزی درسی.	☐	☐	☐	☐	☐
– مشارکت دادن کارفرمایان در تدوین و طراحی برنامه های درسی.	☐	☐	☐	☐	☐
– تأکید بر روحیه کار گروهی در فعالیتهای آموزشی و تدریس.	☐	☐	☐	☐	☐
– تدارک فرصتهای مناسب برای معلمین در جهت آشنائی آنان با موقعیتهای واقعی کار.	☐	☐	☐	☐	☐
– تسهیل روابط مدرسه با سایر مؤسسات از طریق اصلاح شیوه های مدیریت آموزشی.	☐	☐	☐	☐	☐
– تأکید بر شیوه مدیریت کیفیت برای بهبود روشها و وسایل موجود در مرتبط نمودن فعالیتهای مدرسه با کار.	☐	☐	☐	☐	☐
– تدوین یک سیستم کارا و مداوم ارزشیابی از برنامه درسی جهت بهبود اهداف و استانداردهای موبوطه.	☐	☐	☐	☐	☐
– تأکید بر استفاده از خدمات تکنولوژی آموزشی در تدریس دروس و مواد عملی برنامه.	☐	☐	☐	☐	☐
– تأکید بر استفاده از خدمات راهنمائی و مشاوره برای هدایت بهتر دانش آموزان در جهت فرصتهای موجود اشتغال.	☐	☐	☐	☐	☐
– تأکید بر آموزشهای شغلی در مدرسه.	☐	☐	☐	☐	☐
– تأسیس دفتر ارتباط با اشتغال در مدرسه.	☐	☐	☐	☐	☐
– تأکید بر نقش ها و مسئولیتهای فردی و اجتماعی افراد که برای رشد و توسعه جامعه ضرورند.	☐	☐	☐	☐	☐

لطفا" اگر نظر یا پیشنهاد خاص دیگری در خصوص تحکیم رابطه نظام آموزشی و برنامه های درسی با شرایط

و نیازهای مشاغل که نهایتا" به بهبود وضعیت اشتغال فارغ التحصیلان مدارس متوسطه کمک نماید، در زیر شرح دهید. مجددا" از همکاری و عنایت شما در پر کردن این پرسشنامه کمال تشکر و امتنان را دارد.

Appendix 5.3:

Interview' questions for Senior Educational Officials

Guideline for the interview administered to educational policy makers

The main purposes of the interview:

A. Policy makers opinions about the importance of education and the economy relationships.
B. The existing relationship between secondary schools and workplace.
C. Rationales for recent educational reforms and its developed models.

1. Why do you think that education should be linked to economy?
2. To what extent do you think the system of education in Iran is or should be congruent or planned to fit with the economic system?
3. Which 'Education for Work Models' , or which countries' experiences have been followed and used during recent educational reforms?
4. How does the system of education analyse the requirements of the labour market (required skills), and how do the educational policy makers intent to cover them in school programmes?
5. To what extent do you think that the outcomes of the educational reform cover the national aims in regard to linking education to the economy? Which factors affect the reform and how?

Appendix 5.4:
Interview's questions for employers

Guideline for the interview administered to employers

The main purposes of the interview:

A. The existing relationship between school and workplace.
B. Employer options about the problems of this relationship.
C. The performance of school leavers at workplace.
D. The responsibilities of employers for improving the future employees' skills.

1. To what extent, co-ordination and co-operation between the schooling system and industries for better preparation of students for world of work is necessary and why?

2. Does your company satisfy with the present system of preparation of young people for world of work at schools?

Yes No Why?

3. Which sort of skills and abilities do you think are essential for working in your company?

- Academic skills, please name the most important of them;
- Technical and practical skills, please name the most important of them;
- Social and interpersonal skills, please name the most important of them.

4. How do you think schools can prepare pupils according to your company requirement?

5. For better preparation system of young people for work, which one of following work experience your company prefers?
- Work experience at school.
- Work experience at workplace.
- Work experience at both school and workplace.

6. How your company, do you think, can help school to improve their services regarding to their preparation programs for work life?

Appendix 5.5:
The Ministry of Education Letter

جمهوری اسلامی ایران

وزارت آموزش و پرورش

امور نظام جدید آموزش متوسطه

(دفتر تحقیقات و برنامه‌ریزی)

شماره: ۴۶۰/۱۴۴۲/ع پوست: —

تاریخ: ۷۴/۳/۲۹

جناب آقای نعمت ا ... عزیزی

سلام علیکم

احتراماً ، عطف به نامه مورخ ۷۴/۱/۳۰، این معاونت آماده است که هنگام بازگشت جنابعالی به کشور و مراجعه به این معاونت با دراختیارگذاشتن اطلاعات مربوط به آموزشهای متوسطه فنی و حرفه‌ای کشور، همکاری لازم را برای انجام پروژه دوره دکتری جنابعالی بعمل آورد . بنابراین برای مزیداطلاع ساختارجدید آموزش متوسطه کشور بطور مختصرمعرفی ویادآوری می‌نماید که این نظام از مهرماه سال ۱۳۷۱ در کشور به مرحله اجرادرآمده است .

ساختارنظام جدید آموزش متوسطه کشور شامل ۳ شاخه تحصیلی نظری، فنی‌وحرفه‌ای وکاردانش است . باایجاد شاخه کاردانش، طرح کادازبرنامه دبیرستانها حذف شده و امکانات و تسهیلاتی برای حرفه‌آموزی و ارتباط میان آموزش و بازارکارفراهم گردیده است .

شاخه متوسطه نظری شامل رشته ریاضی فیزیك، ادبیات و علوم‌انسانی و علوم تجربی است . شاخه متوسطه فنی و حرفه‌ای مشتمل بر سه زمینه صنعت، کشاورزی و خدمات است . در هر یك اززمینه‌هانیزگروههای آموزشی شامل رشته‌هاوگرایشهای تحصیلی وجوددارندکه برنامه تحصیلی آنها پنج ساله و تا پایان دوره کاردانی ادامه خواهدداشت . برای هریك از این رشته‌ها و یا گرایشها برنامه تفضیلی تهیه و تدوین شده و هم‌اکنون دانش آموزان در سال سوم این رشته و گرایشها مشغول به تحصیل هستندواولین گروه آنان مهرماه سال جاری دارد دوره پیش‌دانشگاهی خواهندشد . درزمینه صنعت گروههای مکانیك، علوم و فنون دریائی ، برق، موادوعمران وجوددارندودر مجموع ۱۹ رشته و ۱۹ گرایش تحصیلی دراین زمینه منظورشده است . رشته‌ها و گرایشهای زمینه صنعت عبارتنداز :

چاپ ـ تا ، سیسات ـ صنایع چوب ـ صنایع اتومبیل ـ ساخت و تولید ـ طراحی ونقشه‌کشی ـ صنایع فلزی ـ الکترونیك ومخابرات دریائی ـ مکانیك موتورهای دریائی ـ ناوبری ـ الکترونیك ـ الکتروتکنیك ـ سرامیك

بزرگراه شهید مدرس – خیابان شهید بستگردی (طفر) – خیابان شهید فرید افشار (رئیسی) – خیابان شهید دلیری (نونهالان) – نبش کوچهٔ شهید رسولزاده – پلاک ۳۲
معاونت آموزش متوسطه – کد پستی ۱۹۱۶۹ – تلفن ۲۰۰۳۴۹۹ – ۲۰۰۶۹۱۲

جمهوری اسلامی ایران
وزارت آموزش و پرورش
امور نظام جدید آموزش متوسطه
(دفتر تحقیقات و برنامه‌ریزی)
تاریخ: شماره: پیوست:

متالوژی - صنایع نساجی - صنایع شیمیایی - معدن - ساختمان - نقشه‌برداری رشته‌تاءسیسات شامل ۲ گرایش تهویه مطبوع وتبرید، رشته صنایع اتومبیل شامل ۲ گرایش صنایع خودروسنگین و خودروسبك رشته ساخت و تولید شامل ۲ گرایش قالبسازی وماشین‌افزار وصنایع فلزی شامل ۲ گرایش صنایع فلزی و جوشکاری است .

رشته الکترونیك شامل ۳ گرایش الکترونیك صنعتی - مخابرات و رادیوتلویزیون است .

رشته الکتروتکنیك شامل ۳ گرایش برق‌صنعتی، تاءسیسات الکتریکی والکترومکانیك است .

رشته‌سرامیك شامل ۲ گرایش سرامیك وصنایع شیشه، رشته‌متالوژی شامل ۳ گرایش متالوژی آزمایشگاهی - ریخته‌گری ومدلسازی است .

زمینه‌کشاورزی شامل گروه‌کشاورزی بارشته‌های صنایع غذایی، منابع‌طبیعی با ۲ گرایش جنگل و مرتع و آبخیزداری، امورزراعی وباغی با ۲ گرایش تولیدات گیاهی وآب و خاك، اموردامی با ۲ گرایش تکنولوژی‌پرورش طیور و تکنولوژی پرورش دام ، ماشینهای کشاورزی با ۲ گرایش مکانیك‌ماشین‌های کشاورزی و مکانیزاسیون کشاورزی است .

زمینه خدمات شامل گروههای اداری مالی بارشته‌حسابداری بازرگانی، گروه‌بهداشت شامل رشته کودکیاری باگرایشهای مربی‌بهداشت مدارس ومربی کودك ، گروه‌کامپیوتر با رشته کامپیوتر، گروه‌هنرشامل رشته‌های موسیقی - هنرهای نمایشی - صنایع دستی - گرافیك - طراحی و دوخت باگرایشهای طراحی‌دوخت و چاپ پارچه نقشه‌کشی ساختمان با ۳ گرایش اجرای‌ساختمان ومعماری‌داخلی‌است و نقشه‌کشی فنی ساختمان‌و معماری‌است درشاخه‌کاردانش‌نیزمتناسب با رشته‌های صنعت، خدمات وکشاورزی دوره‌های مختلف آموزشی برای تربیت‌وتاءمین‌نیروی‌لازم در سطح نیمه‌ماهر، ماهرواستادکاروسرپرستی برای بخشهای مختلف درنظرگرفته‌شده‌است .

به‌منظورارتقاء کیفیت وکمیت آموزشهای فنی و حرفه‌ای دفترتحقیقات‌وبرنامه‌ریزی آموزش فنی و حرفه‌ای و دیگرمراکزتحقیقاتی کشورنیز پژوهشهائی رادراین‌مورد انجام‌داده‌اند که فهرست آنها بشرح زیراست :

۱) بررسی وضعیت اشتغال فارغ‌التحصیلان هنرستانهای فنی درصنایع سنگین (۷کارخانه

بزرگراه شهید مدرس - خیابان شهید دستگردی (ظفر) - خیابان شهید فرید افشار (رشمسی) - خیابان شهید دلیری (نونهالان) - نبش کوچهٔ شهید رسول‌زاده
معاونت آموزش متوسطه - کد پستی ۱۹۱۶۹ - تلفن : ۲۰۰۲۳۹۹ - ۲۰۰۶۹۱۴

جمهوری اسلامی ایران

وزارت آموزش و پرورش

امور نظام جدید آموزش متوسطه

تاریخ: شماره: پیوست:

وابسته به صنایع سنگین)

به سفارش معاونت آموزش فنی و حرفه‌ای وزارت آموزش و پرورش - مجری موءسسه مطالعات و برنامه - ریزی آموزشی

۲) تحقیق و بررسی در وضعیت اشتغال فارغ التحصیلان پسر سال ۶۵ هنرستانهای فنی، حرفه‌ای و کشاورزی و مقایسه آن با وضعیت اشتغال تعداد مشابه فارغ التحصیلان پسر دبیرستان - های نظری این تحقیق به سفارش دفتر تحقیقات و برنامه‌ریزی آموزش فنی و حرفه‌ای و توسط آقای اسفندیار خراط زبردست در سال ۱۳۷۱ انجام شده‌است .

۳) بررسی رابطه آموزشهای رسمی فنی و حرفه‌ای با اشتغال فارغ التحصیلان کشور طی سالهای ۶۷ - ۶۳" این تحقیق به سفارش شورای تحقیقات وزارت متبوع و در ۲۵ استان کشور در سالهای ۷۲ و ۷۳ انجام شده و تهیه گزارش کلی آن در دست اقدام است .

۴) بررسی رابطه آموزش واشتغال در بخش غیرمتشکل اقتصادی (کارگاههای کوچک تهران) سفارش دهنده دبیرخانه شورای پژوهشی دانشگاه تهران و محقق آن آقای دکتر غلامحسین شکوهی است .

۵) بررسی میزان کارائی رشته‌های مختلف آموزش و پرورش با نیاز جامعه ، با توجه به توزیع دانش‌آموزان رشته‌های متوسطه در استان آذربایجان شرقی

محقق : آقای دکتر داود حسینی نسب - سفارش دهنده دانشکده علوم تربیتی دانشگاه تبریز

حمید منصورنیا

مدیرکل تحقیقات و برنامه‌ریزی

آموزش فنی و حرفه‌ای

Appendix 5.6:
The Educational Research Centre Letter

839265

C-F-E-R

شماره ۷۴/۲۷۶

تاریخ ۷۴/۲/۱۷

پیوست .....

بسمه تعالی

جمهوری اسلامی ایران

وزارت آموزش و پرورش

سازمان پژوهش و برنامه‌ریزی آموزشی

مرکز تحقیقات آموزشی

Mr. Nematollah Azizi
University of Bath, School of Education
Fax: 0044- 1225- 826313

جناب آقای عزیزی

باسلام‌وآرزوی توفیق فاکس جنابعالی درارتباط با موضوع پایان نامه

A Search for the Work-related Curriculum: The relation between schooling and employment in Iran.

درتاریخ ۷۴/۳/۲۷ (17 May, 1995) دریافت گردید.

باتوجه‌به‌اهداف ، سوالهاوشیوه‌اجرای طرح ، یافته‌های حاصل‌ازاین پژوهش می‌تواند مورداستفاده کارشناسان ودست اندرکاران تعلیم‌وتربیت کشوردر وزارت آموزش وپرورش قرارگیرد. توفیق جنابعالی راخواستارم ./ش

باتشکر- دکترعلیرضاکیامنش

سرپرست مرکزتحقیقات آموزشی وکبیرشورای تحقیقات

تهران ـ ابتدای خیابان ایرانشهر شمالی پلاک ۲۷۴ ساختمان شهید موسوی

تلفن: ۸۸۲۰۳۵۸ فاکس: ۸۳۹۲۶۵

Appendix 5.7:
The Institute for educational Research letter to Tehran Education Department

«به نام خدا»

وزارت آموزش و پرورش
پژوهشکده تعلیم و تربیت
Ministry of Education
Institute for Educational Research(I.E.R.)

Ref. No.: .....
date: .....

شماره: ۹۰/۱۸۳
تاریخ: ۷۵/۱/۲۱

اداره کل آموزش و پرورش شهر تهران

بااهداء سلام

احتراماً بدینوسیله آقای نعمت ا...عزیزی دانشجوی ایرانی شاغل به تحصیل در دوره دکترای تعلیم وتربیت در کشور انگلستان به حضورتان معرفی می گردد. مستدعی است دستور فرمائید همکاریهای لازم را جهت گردآوری اطلاعات مورد نیاز رسالهٔ دکترای مشارالیه بعمل آید.

قبلاً" از عطف توجه شما به موضوع تشکر و قدرانی می نماید./ک

باتقدیم احترام

دکتر محمود مهرمحمدی

رئیس پژوهشکده تعلیم و تربیت و دبیر شورای تحقیقات

عیناً به نماطن ۲ را التماس ارسال میگردد و انجام تحقیق
فوق پس از احراز هویت نامبرده توسط مسئول
آموزشگاه بلامانع است

قطع مربوط
پس از تایید واحد مانع

کارشناسی تحقیقات
۷۵/۱

اداره کل آموزش و پرورش تهران

Address: 196 Keshavarz Blvd. Tehran, Iran
Tel.: 658227, 655437-8
Fax: 655979
E-Mail: IER@GIREARN. BITNET

نشانی: تهران - بلوار کشاورز - روبروی وزارت کشاورزی
تلفن: ۶۵۸۲۲۷، ۶۵۵۴۳۷-۸
فاکس: ۶۵۵۹۷۹
پست الکترونیک: IER@GIREARN. BITNET

۷۵/۱/۲۲

Appendix 5.8:
Kurdistan Education Department letter to schools & regions

شماره ۱۲۲۹۸/۱/۶

تاریخ ۱۳۷۵/۱۱/۲۲

پیوست .....

جمهوری اسلامی ایران

وزارت آموزش و پرورش
اداره کل آموزش و پرورش استان کردستان

بسمه‌تعالی

از : اداره کل آموزش وپرورش استان کردستان (شواری تحقیقات)

به : اداره آموزش وپرورش ناحیه ۱و۲ شهرستان سنندج - کامیاران

سلام علیکم

احتراما" بدینوسیله برادر نعمت ا ... عزیزی دانشجوی دوره دکترا جهت اجرای پرسشنامه طرح پژوهشی " بررسی رابطه نظام آموزش متوسطه ونیازهای اشتغال " دربین دبیران دوره متوسطه آن ناحیه معرفی میگردد مستدعی است دستور فرمائید با نامبرده مساعدت وهمکاری لازم معمول فرمائید. ۱/۱۸ ۱٪

بهروز همتی

مدیرکل ورئیس شورای تحقیقات آموزش وپرورش کردستان

Appendix 5.9:
Kurdistan University Letter to local industries

شماره ۳/۱۲۴۴
تاریخ ۷۰/۵/۲۱
پیوست .....

بسمه تعالی

جمهوری اسلامی ایران

وزارت فرهنگ و آموزش عالی
دانشگاه کردستان

گـــواهـــی میشـــود :

آقای نعمت الله عزیزی عضو هیات علمی سابق این دانشگاه بوده که در حال حاضر جهت گذراندن دورهٔ دکتری در کشور انگلیس مشغول به تحصیـــل می باشد و جهت جمع آوری اطلاعات مورد نیاز رشته تحصیلی خود نیاز بـــه همکاری صنایع موجود در منطقه را دارد لذا خواهشمند است دستور فرماینـد در این خصوص همکاری لازم با ایشان مبذول دارند ./س

دکتر پرویز رشیدیان
معاون آموزشی و پژوهشی دانشگاه کردستان

Appendix 6.1: Teachers & Students Responses to Question No. 1

(1) Communication Skills

- Understand and speak the language in which business is conducted.

	Strong Emphasis	Emphasis	Uncertain	Little emphasis	No emphasis
Teachers	10.1	52.3	7.3	24.8	5.5
student	6.1	39.1	7.8	40	7

- listen to understand and learn.

	Strong Emphasis	Emphasis	Uncertain	Little emphasis	No emphasis
Teachers	16.4	39.1	6.4	32.7	5.5
student	12.2	29.6	7	41.7	9.6

- Read, comprehend and use written materials, including graphs, charts and displays.

	Strong Emphasis	Emphasis	Uncertain	Little emphasis	No emphasis
Teachers	8.5	34.9	4.7	37.7	14.2
student	6.1	14.8	9.6	52.2	17.4

- Write effectively in the language in which business is conducted.

	Strong Emphasis	Emphasis	Uncertain	Little emphasis	No emphasis
Teachers	8.5	37.7	6.6	33	14.2
student	6.1	22.8	11.4	38.6	21.1

(2) Thinking Skills

- Think critically and act logically.

	Strong Emphasis	Emphasis	Uncertain	Little emphasis	No emphasis
Teachers	10.1	32.1	7.3	38.5	11.9
student	4.3	27	7.8	42.6	18.3

- The ability to evaluate and to compare situations.

	Strong Emphasis	Emphasis	Uncertain	Little emphasis	No emphasis
Teachers	6.4	27.3	10	43.6	12.7
student	2.6	22.6	18.3	39.1	17.4

- Decision making ability.

	Strong Emphasis	Emphasis	Uncertain	Little emphasis	No emphasis
Teachers	3.8	32.1	9.4	45.3	9.4
student	3.5	26.3	14.9	44.7	10.5

- Problem solving ability and understanding.

	Strong Emphasis	Emphasis	Uncertain	Little emphasis	No emphasis
Teachers	7.6	33.3	9.5	40	9.5
student	7.1	28.6	12.5	40.2	11.6

- Access and apply specialised knowledge from various fields.

	Strong Emphasis	Emphasis	Uncertain	Little emphasis	No emphasis
Teachers	7.6	32.4	10.5	34.3	15.2
student	8	17.9	7.1	42.9	24.1

- The ability to solve problems involving mathematics and use the results.

	Strong Emphasis	*Emphasis*	*Uncertain*	*Little emphasis*	*No emphasis*
Teachers	4	28.7	21.8	38.6	6.9
student	7	21.7	19.1	39.1	13

- The ability to research in different ways.

	Strong Emphasis	*Emphasis*	*Uncertain*	*Little emphasis*	*No emphasis*
Teachers	5.7	21	5.7	43.8	23.8
student	0.9	6.1	12.2	42.6	38.3

- The ability to analyse statistical data creatively.

	Strong Emphasis	*Emphasis*	*Uncertain*	*Little emphasis*	*No emphasis*
Teachers	5.6	15.7	12	39.8	26.9
student	1.8	9.7	13.3	44.2	31

(3) Positive Attitudes and Behaviours

- Self-esteem and confidence.

	Strong Emphasis	*Emphasis*	*Uncertain*	*Little emphasis*	*No emphasis*
Teachers	17.8	37.4	11.2	27.1	6.5
student	9.6	35.7	16.5	27	11.3

- Honesty, integrity and personal ethics.

	Strong Emphasis	*Emphasis*	*Uncertain*	*Little emphasis*	*No emphasis*
Teachers	15	44.9	12.1	21.5	6.5
student	17.5	44.7	12.3	21.1	4.4

- A positive attitude toward learning, growth and personal health.

	Strong Emphasis	*Emphasis*	*Uncertain*	*Little emphasis*	*No emphasis*
Teachers	13	46.3	12	23.1	5.6
student	15.7	38.3	13.9	28.7	3.5

- Initiative, energy and persistence to get the job done.

	Strong Emphasis	*Emphasis*	*Uncertain*	*Little emphasis*	*No emphasis*
Teachers	13.2	34	15.1	30.1	7.5
student	10.5	36.8	11.4	34.2	7

(4) Responsibility

- The ability to set goals and priorities in work and personal life.

	Strong Emphasis	*Emphasis*	*Uncertain*	*Little emphasis*	*No emphasis*
Teachers	11.1	33.3	10.2	31.5	13.9
student	7.8	25.2	13	38.3	15.7

- The ability to plan and manage time, money and other resources to achieve goals.

	Strong Emphasis	*Emphasis*	*Uncertain*	*Little emphasis*	*No emphasis*
Teachers	9.4	30.2	13.2	33	14.2
student	6.1	25.2	13	33.9	21.7

- Accountability for actions taken.

	Strong Emphasis	*Emphasis*	*Uncertain*	*Little emphasis*	*No emphasis*
Teachers	9.3	27.8	13.9	37	12
student	7	27.8	20.9	32.2	12.2

(5) Adaptability and Flexibility

- A positive attitude toward change.

	Strong Emphasis	*Emphasis*	*Uncertain*	*Little emphasis*	*No emphasis*
Teachers	8.6	34.3	17.1	25.7	14.3
student	1.8	30.7	24.6	33.3	9.6

- Recognition of and respect for people's diversity and individual differences.

	Strong Emphasis	*Emphasis*	*Uncertain*	*Little emphasis*	*No emphasis*
Teachers	12.5	36.5	12.5	29.8	8.7
student	13	26.9	13	27.8	16.5

- The ability to identify and suggest new ideas to get the job done creatively.

	Strong Emphasis	*Emphasis*	*Uncertain*	*Little emphasis*	*No emphasis*
Teachers	7.5	34	8.5	37.7	12.3
student	5.3	30.7	11.4	38.6	14

- The ability to work in different situations.

	Strong Emphasis	*Emphasis*	*Uncertain*	*Little emphasis*	*No emphasis*
Teachers	6.8	26.2	14.6	39.8	12.6
student	2.6	23.5	23.5	39.1	11.3

- The ability to work with new tools, instruments and in new situations.

	Strong Emphasis	*Emphasis*	*Uncertain*	*Little emphasis*	*No emphasis*
Teachers	10.4	23.6	13.2	34.9	17.9
student	3.5	16.7	15.8	37.7	26.3

- Use technology and information systems effectively

	Strong Emphasis	*Emphasis*	*Uncertain*	*Little emphasis*	*No emphasis*
Teachers	10.5	15.2	17.1	24.8	32.4
student	6.1	11.3	11.3	28.7	42.6

(6) Team Work Skills

- Understand and contribute to group or organisational goals.

	Strong Emphasis	*Emphasis*	*Uncertain*	*Little emphasis*	*No emphasis*
Teachers	6.6	33	12.3	34	14.2
student	7	20.9	15.7	40	16.5

- The ability to plan and take decisions with others and support the outcomes.

	Strong Emphasis	*Emphasis*	*Uncertain*	*Little emphasis*	*No emphasis*
Teachers	7.6	31.4	9.5	35.2	16.2
student	5.2	27	11.3	38.3	18.3

- Understand and work within the culture of the group.

	Strong Emphasis	*Emphasis*	*Uncertain*	*Little emphasis*	*No emphasis*
Teachers	5.6	26.2	12.1	41.1	15
student	10.4	27	7.8	39.1	15.7

- Respect the thoughts and opinions of others in the group.

	Strong Emphasis	*Emphasis*	*Uncertain*	*Little emphasis*	*No emphasis*
Teachers	17.8	29	7.5	26.2	19.6
student	16.5	26.1	16.5	30.4	10.4

- Exercise "give and take" to achieve group results.

	Strong Emphasis	*Emphasis*	*Uncertain*	*Little emphasis*	*No emphasis*
Teachers	6.5	36.4	9.3	35.5	12.1
student	11.5	28.3	11.5	33.6	15

- Seek a team approach as appropriate.

	Strong Emphasis	*Emphasis*	*Uncertain*	*Little emphasis*	*No emphasis*
Teachers	7.5	33.6	11.2	39.3	8.4
student	3.5	18.6	21.2	40.715.9	

- Group leadership skills for high performance.

	Strong Emphasis	*Emphasis*	*Uncertain*	*Little emphasis*	*No emphasis*
Teachers	14	23.4	9.3	42.1	11.2
student	7	24.6	21.1	32.5	14.9

Appendix 6.2: Chi-square Results by Gender

Question 1: To what extent the academic courses in secondary education places emphasis on the qualities such as : communication skills, thinking skills, positive attitudes and behaviours, responsibility, adaptability and flexibility, and team work kills?

SEX Sex by Q1a:Communication Skills

Q1a Page 1 of 1

SEX	Count / Exp Val / Row Pct / Col Pct / Tot Pct	No emphasis 1.00	Uncertain 2.00	Emphasis 3.00	Row Total
Male	1.00	66	39	29	134
		67.3	41.1	25.6	59.6%
		49.3%	29.1%	21.6%	
		58.4%	56.5%	67.4%	
		29.3%	17.3%	12.9%	
FEMALE	2.00	47	30	14	91
		45.7	27.9	17.4	40.4%
		51.6%	33.0%	15.4%	
		41.6%	43.5%	32.6%	
		20.9%	13.3%	6.2%	
	Column Total	113 50.2%	69 30.7%	43 19.1%	225 100.0%

Chi-Square	Value	DF	Significance
Pearson	1.43582	2	.48777
Likelihood Ratio	1.46284	2	.48122
Mantel-Haenszel test for linear association	.67702	1	.41062

Minimum Expected Frequency - 17.391

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.07988			.48777 *1
Cramer's V	.07988			.48777 *1

Eta :

with SEX	dependent	.07988
with CSA	dependent	.05498

*1 Pearson chi-square probability

Number of Missing Observations: 0

SEX Sex by Q1b: Thinking Skills

SEX	Q1b: No emphasis 1.00	Uncertain 2.00	Emphasis 3.00	Row Total
1.00 Male	96	27	11	134
	96.3	28.7	9.0	59.8%
	71.6%	20.1%	8.2%	
	59.6%	56.3%	73.3%	
	42.9%	12.1%	4.9%	
2.00 FEMALE	65	21	4	90
	64.7	19.3	6.0	40.2%
	72.2%	23.3%	4.4%	
	40.4%	43.8%	26.7%	
	29.0%	9.4%	1.8%	
Column Total	161	48	15	224
	71.9%	21.4%	6.7%	100.0%

Chi-Square	Value	DF	Significance
Pearson	1.39664	2	.49742
Likelihood Ratio	1.45600	2	.48287
Mantel-Haenszel test for linear association	.28038	1	.59645

Minimum Expected Frequency - 6.027

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.07896			.49742 *1
Cramer's V	.07896			.49742 *1

Eta :

with SEX	dependent	.07896
with TSA	dependent	.03546

*1 Pearson chi-square probability

Number of Missing Observations: 1

SEX Sex by Q1c: Attitudes and Behaviours

	Q1c			Page 1 of 1
Count / Exp Val / Row Pct / Col Pct / Tot Pct	No emphasis 1.00	Uncertain 2.00	Emphasis 3.00	Row Total
SEX				
1.00 Male	43	47	42	132
	44.4	46.8	40.8	59.2%
	32.6%	35.6%	31.8%	
	57.3%	59.5%	60.9%	
	19.3%	21.1%	18.8%	
2.00 FEMALE	32	32	27	91
	30.6	32.2	28.2	40.8%
	35.2%	35.2%	29.7%	
	42.7%	40.5%	39.1%	
	14.3%	14.3%	12.1%	
Column Total	75	79	69	223
	33.6%	35.4%	30.9%	100.0%

Chi-Square	Value	DF	Significance
Pearson	.19063	2	.90909
Likelihood Ratio	.19052	2	.90914
Mantel-Haenszel test for linear association	.18654	1	.66581

Minimum Expected Frequency - 28.157

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.02924			.90909 *1
Cramer's V	.02924			.90909 *1

Eta :

with SEX	dependent	.02924
with ABA	dependent	.02899

*1 Pearson chi-square probability

Number of Missing Observations: 2

SEX Sex by Q1d: Responsibility

Q1d Page 1 of 1

SEX	Count / Exp Val / Row Pct / Col Pct / Tot Pct	No emphasis 1.00	Uncertain 2.00	Emphasis 3.00	Row Total
1.00 Male		71 71.0 53.8% 59.2% 31.8%	29 29.6 22.0% 58.0% 13.0%	32 31.4 24.2% 60.4% 14.3%	132 59.2%
2.00 FEMALE		49 49.0 53.8% 40.8% 22.0%	21 20.4 23.1% 42.0% 9.4%	21 21.6 23.1% 39.6% 9.4%	91 40.8%
	Column Total	120 53.8%	50 22.4%	53 23.8%	223 100.0%

Chi-Square	Value	DF	Significance
Pearson	.06027	2	.97031
Likelihood Ratio	.06028	2	.97031
Mantel-Haenszel test for linear association	.01172	1	.91381

Minimum Expected Frequency - 20.404

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.01644			.97031 *1
Cramer's V	.01644			.97031 *1

Eta :

with SEX	dependent	.01644
with RA	dependent	.00726

*1 Pearson chi-square probability

Number of Missing Observations: 2

SEX Sex by Q1e: Adaptability and Flexibility

	Q1e			Page 1 of 1
Count / Exp Val / Row Pct / Col Pct / Tot Pct	No emphasis 1.00	Uncertain 2.00	Emphasis 3.00	Row Total
SEX				
1.00 Male	75 81.8 56.8% 54.7% 33.9%	40 35.2 30.3% 67.8% 18.1%	17 14.9 12.9% 68.0% 7.7%	132 59.7%
2.00 FEMALE	62 55.2 69.7% 45.3% 28.1%	19 23.8 21.3% 32.2% 8.6%	8 10.1 9.0% 32.0% 3.6%	89 40.3%
Column Total	137 62.0%	59 26.7%	25 11.3%	221 100.0%

Chi-Square	Value	DF	Significance
Pearson	3.72256	2	.15547
Likelihood Ratio	3.77019	2	.15181
Mantel-Haenszel test for linear association	3.11210	1	.07771

Minimum Expected Frequency - 10.068

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.12979			.15547 *1
Cramer's V	.12979			.15547 *1

Eta :

with SEX	dependent	.12979
with AFA	dependent	.11894

*1 Pearson chi-square probability

Number of Missing Observations: 4

SEX Sex by Q1f: Team Work Skills

	Q1f			Page 1 of 1
Count / Exp Val / Row Pct / Col Pct / Tot Pct	No emphasis 1.00	Uncertain 2.00	Emphasis 3.00	Row Total
SEX				
1.00 Male	78 78.6 58.2% 59.1% 34.7%	33 32.2 24.6% 61.1% 14.7%	23 23.2 17.2% 59.0% 10.2%	134 59.6%
2.00 FEMALE	54 53.4 59.3% 40.9% 24.0%	21 21.8 23.1% 38.9% 9.3%	16 15.8 17.6% 41.0% 7.1%	91 40.4%
Column Total	132 58.7%	54 24.0%	39 17.3%	225 100.0%

Chi-Square	Value	DF	Significance
Pearson	.07155	2	.96486
Likelihood Ratio	.07176	2	.96476
Mantel-Haenszel test for linear association	.00466	1	.94557

Minimum Expected Frequency - 15.773

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.01783			.96486 *1
Cramer's V	.01783			.96486 *1

Eta :

with SEX	dependent	.01783
with TWSA	dependent	.00456

*1 Pearson chi-square probability

Number of Missing Observations: 0

SEX Sex by Q2: Do you think that there should be a connection between the needs of labour market and the high school curriculum?

SEX	Q2	1.00 Not at all	2.00 To a little extent	3.00 Uncertain	4.00 To a large extent	5.00 Completely	Row Total
1.00 Male	Count	2	4	0	65	63	134
	Exp Val	1.2	3.6	2.4	63.1	63.7	59.6%
	Row Pct	1.5%	3.0%	.0%	48.5%	47.0%	
	Col Pct	100.0%	66.7%	.0%	61.3%	58.9%	
	Tot Pct	.9%	1.8%	.0%	28.9%	28.0%	
2.00 FEMALE	Count	0	2	4	41	44	91
	Exp Val	.8	2.4	1.6	42.9	43.3	40.4%
	Row Pct	.0%	2.2%	4.4%	45.1%	48.4%	
	Col Pct	.0%	33.3%	100.0%	38.7%	41.1%	
	Tot Pct	.0%	.9%	1.8%	18.2%	19.6%	
Column Total		2 .9%	6 2.7%	4 1.8%	106 47.1%	107 47.6%	225 100.0%

Chi-Square	Value	DF	Significance
Pearson	7.53177	4	.11032
Likelihood Ratio	9.60197	4	.04769
Mantel-Haenszel test for linear association	.08997	1	.76421

Minimum Expected Frequency - .809
Cells with Expected Frequency < 5 - 6 OF 10 (60.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.18296			.11032 *1
Cramer's V	.18296			.11032 *1

Eta :

with SEX	dependent	.18296
with Q2	dependent	.02004

*1 Pearson chi-square probability

Number of Missing Observations: 0

SEX Sex by Q3: Do you think that curriculum policy makers have taken into account the labour market needs of the economy in designing the present high school curriculum?

	Q3					Page 1 of 1
SEX	Count / Exp Val / Row Pct / Col Pct / Tot Pct	Not at all 1.00	To a little extent 2.00	Uncertain 3.00	To a large extent 4.00	Completely 5.00	Row Total
1.00 Male		37	66	16	12	2	133
		36.8	62.3	16.6	13.7	3.6	59.4%
		27.8%	49.6%	12.0%	9.0%	1.5%	
		59.7%	62.9%	57.1%	52.2%	33.3%	
		16.5%	29.5%	7.1%	5.4%	.9%	
2.00 FEMALE		25	39	12	11	4	91
		25.2	42.7	11.4	9.3	2.4	40.6%
		27.5%	42.9%	13.2%	12.1%	4.4%	
		40.3%	37.1%	42.9%	47.8%	66.7%	
		11.2%	17.4%	5.4%	4.9%	1.8%	
Column Total		62 27.7%	105 46.9%	28 12.5%	23 10.3%	6 2.7%	224 100.0%

Chi-Square	Value	DF	Significance
Pearson	2.76937	4	.59713
Likelihood Ratio	2.73344	4	.60338
Mantel-Haenszel test for linear association	1.38167	1	.23982

Minimum Expected Frequency - 2.438
Cells with Expected Frequency < 5 - 2 OF 10 (20.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.11119			.59713 *1
Cramer's V	.11119			.59713 *1

Eta :

with SEX	dependent	.11119
with Q3	dependent	.07871

*1 Pearson chi-square probability

Number of Missing Observations: 1

SEX Sex by Question 4: Do you think that industrialists should be involved in designing the high school curriculum?

	Q4					Page 1 of 1
	Count / Exp Val / Row Pct / Col Pct / Tot Pct	Not at all	To a little extent	Uncertain	To a large extent	Completely	Row Total
SEX		1.00	2.00	3.00	4.00	5.00	
Male	1.00	1	4	5	90	34	134
		.6	4.2	9.5	82.2	37.5	59.6%
		.7%	3.0%	3.7%	67.2%	25.4%	
		100.0%	57.1%	31.3%	65.2%	54.0%	
		.4%	1.8%	2.2%	40.0%	15.1%	
FEMALE	2.00	0	3	11	48	29	91
		.4	2.8	6.5	55.8	25.5	40.4%
		.0%	3.3%	12.1%	52.7%	31.9%	
		.0%	42.9%	68.8%	34.8%	46.0%	
		.0%	1.3%	4.9%	21.3%	12.9%	
	Column Total	1 .4%	7 3.1%	16 7.1%	138 61.3%	63 28.0%	225 100.0%

Chi-Square	Value	DF	Significance
Pearson	8.67122	4	.06986
Likelihood Ratio	8.95193	4	.06231
Mantel-Haenszel test for linear association	.00066	1	.97957

Minimum Expected Frequency - .404
Cells with Expected Frequency < 5 - 4 OF 10 (40.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.19631			.06986 *1
Cramer's V	.19631			.06986 *1

Eta :

with SEX	dependent	.19631
with Q4	dependent	.00171

*1 Pearson chi-square probability

Number of Missing Observations: 0

SEX Sex by Question 5: Do you think that the high school curriculum should be sensitive to local employment circumstances?

	Q5					Page 1 of 1
SEX	Count / Exp Val / Row Pct / Col Pct / Tot Pct	Not at all 1.00	To a little extent 2.00	Uncertain 3.00	To a large extent 4.00	Completely 5.00	Row Total
1.00 Male		1	6	6	73	47	133
		.6	5.4	7.2	73.4	46.5	59.6%
		.8%	4.5%	4.5%	54.9%	35.3%	
		100.0%	66.7%	50.0%	59.3%	60.3%	
		.4%	2.7%	2.7%	32.7%	21.1%	
2.00 FEMALE		0	3	6	50	31	90
		.4	3.6	4.8	49.6	31.5	40.4%
		.0%	3.3%	6.7%	55.6%	34.4%	
		.0%	33.3%	50.0%	40.7%	39.7%	
		.0%	1.3%	2.7%	22.4%	13.9%	
Column Total		1 .4%	9 4.0%	12 5.4%	123 55.2%	78 35.0%	223 100.0%

Chi-Square	Value	DF	Significance
Pearson	1.34125	4	.85434
Likelihood Ratio	1.69375	4	.79185
Mantel-Haenszel test for linear association	.02310	1	.87921

Minimum Expected Frequency - .404
Cells with Expected Frequency < 5 - 4 OF 10 (40.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.07755			.85434 *1
Cramer's V	.07755			.85434 *1

Eta :

with SEX	dependent	.07755
with Q5	dependent	.01020

*1 Pearson chi-square probability

Number of Missing Observations: 2

SEX Sex by Question 6: What do you think is the emphasis of the current high school curriculum?

	Q6			Page 1 of 1
SEX	Count Exp Val Row Pct Col Pct Tot Pct	Largely practica 1.00	Mixture of pract 2.00	Largely academic 3.00	Row Total
Male	1.00	7 6.0 5.2% 70.0% 3.1%	26 23.2 19.4% 66.7% 11.6%	101 104.8 75.4% 57.4% 44.9%	134 59.6%
FEMALE	2.00	3 4.0 3.3% 30.0% 1.3%	13 15.8 14.3% 33.3% 5.8%	75 71.2 82.4% 42.6% 33.3%	91 40.4%
	Column Total	10 4.4%	39 17.3%	176 78.2%	225 100.0%

Chi-Square	Value	DF	Significance
Pearson	1.61547	2	.44587
Likelihood Ratio	1.64949	2	.43835
Mantel-Haenszel test for linear association	1.53809	1	.21490

Minimum Expected Frequency - 4.044
Cells with Expected Frequency < 5 - 1 OF 6 (16.7%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.08473			.44587 *1
Cramer's V	.08473			.44587 *1

Eta :
with SEX dependent .08473
with Q6 dependent .08286

*1 Pearson chi-square probability

Number of Missing Observations: 0

SEX Sex by Question 7: Which high school curriculum, do you think the majority of the parents prefer?

Q7 Page 1 of 1

SEX	Count / Exp Val / Row Pct / Col Pct / Tot Pct	Largely practica 1.00	Mixture of pract 2.00	Largely academic 3.00	Row Total
1.00		22	92	20	134
Male		21.1	91.1	21.7	60.4%
		16.4%	68.7%	14.9%	
		62.9%	60.9%	55.6%	
		9.9%	41.4%	9.0%	
2.00		13	59	16	88
FEMALE		13.9	59.9	14.3	39.6%
		14.8%	67.0%	18.2%	
		37.1%	39.1%	44.4%	
		5.9%	26.6%	7.2%	
Column Total		35 15.8%	151 68.0%	36 16.2%	222 100.0%

Chi-Square	Value	DF	Significance
Pearson	.45882	2	.79500
Likelihood Ratio	.45537	2	.79637
Mantel-Haenszel test for linear association	.39726	1	.52851

Minimum Expected Frequency - 13.874

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.04546			.79500 *1
Cramer's V	.04546			.79500 *1

Eta :

with SEX	dependent	.04546
with Q7	dependent	.04240

*1 Pearson chi-square probability

Number of Missing Observations: 3

SEX Sex by Question 8: Which high school curriculum, do you think the majority of the school governors prefer?

	Q8			Page 1 of 1
SEX	Count Exp Val Row Pct Col Pct Tot Pct	Largely practica 1.00	Mixture of pract 2.00	Largely academic 3.00	Row Total
1.00 Male		14 10.7 10.5% 77.8% 6.3%	78 76.9 58.6% 60.5% 35.0%	41 45.3 30.8% 53.9% 18.4%	133 59.6%
2.00 FEMALE		4 7.3 4.4% 22.2% 1.8%	51 52.1 56.7% 39.5% 22.9%	35 30.7 38.9% 46.1% 15.7%	90 40.4%
Column Total		18 8.1%	129 57.8%	76 34.1%	223 100.0%

Chi-Square	Value	DF	Significance
Pearson	3.51979	2	.17206
Likelihood Ratio	3.70758	2	.15664
Mantel-Haenszel test for linear association	3.02071	1	.08221

Minimum Expected Frequency - 7.265

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.12563			.17206 *1
Cramer's V	.12563			.17206 *1

Eta :

with SEX	dependent	.12563
with Q8	dependent	.11665

*1 Pearson chi-square probability

Number of Missing Observations: 2

SEX Sex by Question 9: Which high school curriculum, do you think the majority of the teachers prefer?

SEX	Q9 Page 1 of 1			
	Count / Exp Val / Row Pct / Col Pct / Tot Pct	Largely practica 1.00	Mixture of pract 2.00	Largely academic 3.00	Row Total
1.00 Male		17	84	29	130
		15.6	86.3	28.2	59.9%
		13.1%	64.6%	22.3%	
		65.4%	58.3%	61.7%	
		7.8%	38.7%	13.4%	
2.00 FEMALE		9	60	18	87
		10.4	57.7	18.8	40.1%
		10.3%	69.0%	20.7%	
		34.6%	41.7%	38.3%	
		4.1%	27.6%	8.3%	
Column Total		26 12.0%	144 66.4%	47 21.7%	217 100.0%

Chi-Square	Value	DF	Significance
Pearson	.53633	2	.76478
Likelihood Ratio	.54176	2	.76271
Mantel-Haenszel test for linear association	.01969	1	.88841

Minimum Expected Frequency - 10.424

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.04971			.76478 *1
Cramer's V	.04971			.76478 *1

Eta :

with SEX	dependent	.04971
with Q9	dependent	.00955

*1 Pearson chi-square probability

Number of Missing Observations: 8

SEX Sex by Question 10: Which high school curriculum, do you think the majority of the students prefer?

SEX	Count / Exp Val / Row Pct / Col Pct / Tot Pct	Q10 Largely practica 1.00	Mixture of pract 2.00	Largely academic 3.00	Row Total
1.00		39	78	14	131
Male		44.5	73.3	13.2	60.1%
		29.8%	59.5%	10.7%	
		52.7%	63.9%	63.6%	
		17.9%	35.8%	6.4%	
2.00		35	44	8	87
FEMALE		29.5	48.7	8.8	39.9%
		40.2%	50.6%	9.2%	
		47.3%	36.1%	36.4%	
		16.1%	20.2%	3.7%	
Column Total		74 33.9%	122 56.0%	22 10.1%	218 100.0%

Chi-Square	Value	DF	Significance
Pearson	2.55118	2	.27927
Likelihood Ratio	2.53361	2	.28173
Mantel-Haenszel test for linear association	1.93812	1	.16387

Minimum Expected Frequency - 8.780

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.10818			.27927 *1
Cramer's V	.10818			.27927 *1

Eta :

with SEX	dependent	.10818
with Q10	dependent	.09451

*1 Pearson chi-square probability

Number of Missing Observations: 7

SEX Sex by Question 11: What sort of curriculum, do you think would maximise the employment chances of students?

	Q11			Page 1 of 1
Count / Exp Val / Row Pct / Col Pct / Tot Pct	Largely practica 1.00	Mixture of pract 2.00	Largely academic 3.00	Row Total
SEX				
1.00	57	55	18	130
Male	56.4	50.9	22.7	61.3%
	43.8%	42.3%	13.8%	
	62.0%	66.3%	48.6%	
	26.9%	25.9%	8.5%	
2.00	35	28	19	82
FEMALE	35.6	32.1	14.3	38.7%
	42.7%	34.1%	23.2%	
	38.0%	33.7%	51.4%	
	16.5%	13.2%	9.0%	
Column Total	92 43.4%	83 39.2%	37 17.5%	212 100.0%

Chi-Square	Value	DF	Significance
Pearson	3.37618	2	.18487
Likelihood Ratio	3.32148	2	.19000
Mantel-Haenszel test for linear association	1.01717	1	.31319

Minimum Expected Frequency - 14.311

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.12620			.18487 *1
Cramer's V	.12620			.18487 *1

Eta :

with SEX	dependent	.12620
with Q11	dependent	.06943

*1 Pearson chi-square probability

Number of Missing Observations: 13

SEX Sex by Question 12: Do you think that there is any connection between the teaching methods used in the curriculum and the employment chances of pupils?

	Q12					Page 1 of 1
SEX	Count / Exp Val / Row Pct / Col Pct / Tot Pct	No emphasis 1.00	Little emphasis 2.00	Uncertain 3.00	Emphasis 4.00	Strongly emphasi 5.00	Row Total
Male	1.00	29	53	19	28	2	131
		32.4	52.3	18.0	24.6	3.6	60.1%
		22.1%	40.5%	14.5%	21.4%	1.5%	
		53.7%	60.9%	63.3%	68.3%	33.3%	
		13.3%	24.3%	8.7%	12.8%	.9%	
FEMALE	2.00	25	34	11	13	4	87
		21.6	34.7	12.0	16.4	2.4	39.9%
		28.7%	39.1%	12.6%	14.9%	4.6%	
		46.3%	39.1%	36.7%	31.7%	66.7%	
		11.5%	15.6%	5.0%	6.0%	1.8%	
	Column Total	54 24.8%	87 39.9%	30 13.8%	41 18.8%	6 2.8%	218 100.0%

Chi-Square	Value	DF	Significance
Pearson	4.01641	4	.40379
Likelihood Ratio	3.99384	4	.40684
Mantel-Haenszel test for linear association	.60373	1	.43716

Minimum Expected Frequency - 2.394
Cells with Expected Frequency < 5 - 2 OF 10 (20.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.13573			.40379 *1
Cramer's V	.13573			.40379 *1

Eta :
with SEX dependent .13573
with Q12 dependent .05275

*1 Pearson chi-square probability

Number of Missing Observations: 7

SEX Sex by Question 13: How important do you think career education should be in the high school?

SEX	Q13	Not important 1.00	Not important 2.00	Uncertain 3.00	Important 4.00	Very important 5.00	Row Total
Male	1.00	1	4	5	90	32	132
	Exp Val	1.8	6.0	7.8	83.4	33.0	60.0%
	Row Pct	.8%	3.0%	3.8%	68.2%	24.2%	
	Col Pct	33.3%	40.0%	38.5%	64.7%	58.2%	
	Tot Pct	.5%	1.8%	2.3%	40.9%	14.5%	
FEMALE	2.00	2	6	8	49	23	88
		1.2	4.0	5.2	55.6	22.0	40.0%
		2.3%	6.8%	9.1%	55.7%	26.1%	
		66.7%	60.0%	61.5%	35.3%	41.8%	
		.9%	2.7%	3.6%	22.3%	10.5%	
	Column Total	3 1.4%	10 4.5%	13 5.9%	139 63.2%	55 25.0%	220 100.0%

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Chi-Square	Value	DF	Significance
Pearson	6.44989	4	.16798
Likelihood Ratio	6.33613	4	.17541
Mantel-Haenszel test for linear association	2.07770	1	.14947

Minimum Expected Frequency - 1.200
Cells with Expected Frequency < 5 - 3 OF 10 (30.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.17122			.16798 *1
Cramer's V	.17122			.16798 *1

Eta :
with SEX dependent .17122
with Q13 dependent .09740

*1 Pearson chi-square probability

Number of Missing Observations: 5

SEX Sex by Question 14: To what extent do you think, schools use the career education and guidance services to help their students make career chances?

Q14 Page 1 of 1

SEX	Count / Exp Val / Row Pct / Col Pct / Tot Pct	Not at all 1.00	To a little extent 2.00	Uncertain 3.00	To a large extent 4.00	Completely 5.00	Row Total
1.00 Male		42	62	12	13	3	132
		41.4	64.2	9.6	13.2	3.6	60.0%
		31.8%	47.0%	9.1%	9.8%	2.3%	
		60.9%	57.9%	75.0%	59.1%	50.0%	
		19.1%	28.2%	5.5%	5.9%	1.4%	
2.00 FEMALE		27	45	4	9	3	88
		27.6	42.8	6.4	8.8	2.4	40.0%
		30.7%	51.1%	4.5%	10.2%	3.4%	
		39.1%	42.1%	25.0%	40.9%	50.0%	
		12.3%	20.5%	1.8%	4.1%	1.4%	
Column Total		69 31.4%	107 48.6%	16 7.3%	22 10.0%	6 2.7%	220 100.0%

Chi-Square	Value	DF	Significance
Pearson	1.96779	4	.74168
Likelihood Ratio	2.05716	4	.72525
Mantel-Haenszel test for linear association	.00293	1	.95684

Minimum Expected Frequency - 2.400
Cells with Expected Frequency < 5 - 2 OF 10 (20.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.09458			.74168 *1
Cramer's V	.09458			.74168 *1

Eta :

with SEX	dependent	.09458
with Q14	dependent	.00366

*1 Pearson chi-square probability

Number of Missing Observations: 5

Question 15: Which of the following statements accurately describes the current high school curriculum?

SEX Sex by Q15a: The high school curriculum does not take into account the future employment needs of students.

Q15a Page 1 of 1

SEX	Count / Exp Val / Row Pct / Col Pct / Tot Pct	Disagree 2.00	Uncertain 3.00	Agree 4.00	Strongly agree 5.00	Row Total
1.00 Male		25	8	67	32	132
		23.7	10.3	70.0	28.0	60.8%
		18.9%	6.1%	50.8%	24.2%	
		64.1%	47.1%	58.3%	69.6%	
		11.5%	3.7%	30.9%	14.7%	
2.00 FEMALE		14	9	48	14	85
		15.3	6.7	45.0	18.0	39.2%
		16.5%	10.6%	56.5%	16.5%	
		35.9%	52.9%	41.7%	30.4%	
		6.5%	4.1%	22.1%	6.5%	
Column Total		39 18.0%	17 7.8%	115 53.0%	46 21.2%	217 100.0%

Chi-Square	Value	DF	Significance
Pearson	3.32002	3	.34487
Likelihood Ratio	3.33188	3	.34323
Mantel-Haenszel test for linear association	.29109	1	.58952

Minimum Expected Frequency - 6.659

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.12369			.34487 *1
Cramer's V	.12369			.34487 *1

Eta :

with SEX	dependent	.12369
with Q15	dependent	.03671

*1 Pearson chi-square probability

Number of Missing Observations: 8

SEX Sex by Q15b: The high school's methods of teaching are not appropriate for the future employment needs of students.

SEX	Q15b					Page 1 of 1
	Count / Exp Val / Row Pct / Col Pct / Tot Pct	strongly disagre 1.00	Disagree 2.00	Uncertain 3.00	Agree 4.00	Strongly agree 5.00	Row Total
1.00		2	22	13	66	29	132
Male		1.2	25.3	17.5	61.5	26.5	60.3%
		1.5%	16.7%	9.8%	50.0%	22.0%	
		100.0%	52.4%	44.8%	64.7%	65.9%	
		.9%	10.0%	5.9%	30.1%	13.2%	
2.00		0	20	16	36	15	87
FEMALE		.8	16.7	11.5	40.5	17.5	39.7%
		.0%	23.0%	18.4%	41.4%	17.2%	
		.0%	47.6%	55.2%	35.3%	34.1%	
		.0%	9.1%	7.3%	16.4%	6.8%	
Column Total		2 .9%	42 19.2%	29 13.2%	102 46.6%	44 20.1%	219 100.0%

Chi-Square	Value	DF	Significance
Pearson	6.72085	4	.15140
Likelihood Ratio	7.35428	4	.11831
Mantel-Haenszel test for linear association	2.23731	1	.13472

Minimum Expected Frequency - .795
Cells with Expected Frequency < 5 - 2 OF 10 (20.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.17518			.15140 *1
Cramer's V	.17518			.15140 *1

Eta :

with SEX	dependent	.17518
with Q16	dependent	.10131

*1 Pearson chi-square probability

Number of Missing Observations: 6

SEX Sex by Q15c: The high school curriculum is not adequately resourced.

	Q15c					
	Count / Exp Val / Row Pct / Col Pct / Tot Pct	strongly disagre 1.00	Disagree 2.00	Uncertain 3.00	Agree 4.00	Strongly agree 5.00	Row Total
SEX							
1.00		2	11	12	68	39	132
Male		1.2	14.9	20.8	58.9	36.3	59.5%
		1.5%	8.3%	9.1%	51.5%	29.5%	
		100.0%	44.0%	34.3%	68.7%	63.9%	
		.9%	5.0%	5.4%	30.6%	17.6%	
2.00		0	14	23	31	22	90
FEMALE		.8	10.1	14.2	40.1	24.7	40.5%
		.0%	15.6%	25.6%	34.4%	24.4%	
		.0%	56.0%	65.7%	31.3%	36.1%	
		.0%	6.3%	10.4%	14.0%	9.9%	
Column Total		2 .9%	25 11.3%	35 15.8%	99 44.6%	61 27.5%	222 100.0%

Chi-Square	Value	DF	Significance
Pearson	17.04735	4	.00189
Likelihood Ratio	17.62654	4	.00146
Mantel-Haenszel test for linear association	5.57691	1	.01820

Minimum Expected Frequency - .811
Cells with Expected Frequency < 5 - 2 OF 10 (20.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.27711			.00189 *1
Cramer's V	.27711			.00189 *1

Eta :

with SEX	dependent	.27711
with Q17	dependent	.15885

*1 Pearson chi-square probability

Number of Missing Observations: 3

SEX Sex by Q15d: The elements of the high school curriculum are not sufficiently integrated.

Q15d Page 1 of 1

SEX	Count / Exp Val / Row Pct / Col Pct / Tot Pct	strongly disagre 1.00	Disagree 2.00	Uncertai n 3.00	Agree 4.00	Strongly agree 5.00	Row Total
1.00		1	31	15	65	21	133
Male		1.2	36.4	18.5	60.2	16.7	59.6%
		.8%	23.3%	11.3%	48.9%	15.8%	
		50.0%	50.8%	48.4%	64.4%	75.0%	
		.4%	13.9%	6.7%	29.1%	9.4%	
2.00		1	30	16	36	7	90
FEMALE		.8	24.6	12.5	40.8	11.3	40.4%
		1.1%	33.3%	17.8%	40.0%	7.8%	
		50.0%	49.2%	51.6%	35.6%	25.0%	
		.4%	13.5%	7.2%	16.1%	3.1%	
Column Total		2 .9%	61 27.4%	31 13.9%	101 45.3%	28 12.6%	223 100.0%

Chi-Square	Value	DF	Significance
Pearson	7.35747	4	.11816
Likelihood Ratio	7.47559	4	.11279
Mantel-Haenszel test for linear association	6.20192	1	.01276

Minimum Expected Frequency - .807
Cells with Expected Frequency < 5 - 2 OF 10 (20.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.18164			.11816 *1
Cramer's V	.18164			.11816 *1

Eta :

with SEX	dependent	.18164
with Q18	dependent	.16714

*1 Pearson chi-square probability

Number of Missing Observations: 2

SEX Sex by Q15e: The world of work is not emphasised sufficiently in the high school curriculum.

	Q15e					Page 1 of 1
	Count / Exp Val / Row Pct / Col Pct / Tot Pct	strongly disagre 1.00	Disagree 2.00	Uncertai n 3.00	Agree 4.00	Strongly agree 5.00	Row Total
SEX							
	1.00	0	14	9	79	31	133
Male		.6	12.5	11.3	76.9	31.6	59.6%
		.0%	10.5%	6.8%	59.4%	23.3%	
		.0%	66.7%	47.4%	61.2%	58.5%	
		.0%	6.3%	4.0%	35.4%	13.9%	
	2.00	1	7	10	50	22	90
FEMALE		.4	8.5	7.7	52.1	21.4	40.4%
		1.1%	7.8%	11.1%	55.6%	24.4%	
		100.0%	33.3%	52.6%	38.8%	41.5%	
		.4%	3.1%	4.5%	22.4%	9.9%	
	Column Total	1 .4%	21 9.4%	19 8.5%	129 57.8%	53 23.8%	223 100.0%

Chi-Square	Value	DF	Significance
Pearson	3.26351	4	.51473
Likelihood Ratio	3.58506	4	.46506
Mantel-Haenszel test for linear association	.00790	1	.92917

Minimum Expected Frequency - .404
Cells with Expected Frequency < 5 - 2 OF 10 (20.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.12097			.51473 *1
Cramer's V	.12097			.51473 *1

Eta :

with SEX	dependent	.12097
with Q19	dependent	.00597

*1 Pearson chi-square probability

Number of Missing Observations: 2

SEX Sex by Q15f: The high school curriculum is too concerned with the development of theoretical rather than practical knowledge

	Q15f					Page 1 of 1
	Count / Exp Val / Row Pct / Col Pct / Tot Pct	strongly disagre 1.00	Disagree 2.00	Uncertai n 3.00	Agree 4.00	Strongly agree 5.00	Row Total
SEX							
Male	1.00	0	11	3	70	48	132
		.6	10.1	3.6	68.4	49.4	59.5%
		.0%	8.3%	2.3%	53.0%	36.4%	
		.0%	64.7%	50.0%	60.9%	57.8%	
		.0%	5.0%	1.4%	31.5%	21.6%	
FEMALE	2.00	1	6	3	45	35	90
		.4	6.9	2.4	46.6	33.6	40.5%
		1.1%	6.7%	3.3%	50.0%	38.9%	
		100.0%	35.3%	50.0%	39.1%	42.2%	
		.5%	2.7%	1.4%	20.3%	15.8%	
	Column Total	1 .5%	17 7.7%	6 2.7%	115 51.8%	83 37.4%	222 100.0%

Chi-Square	Value	DF	Significance
Pearson	2.06965	4	.72295
Likelihood Ratio	2.40779	4	.66122
Mantel-Haenszel test for linear association	.01598	1	.89942

Minimum Expected Frequency - .405
Cells with Expected Frequency < 5 - 4 OF 10 (40.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.09655			.72295 *1
Cramer's V	.09655			.72295 *1

Eta :

with SEX	dependent	.09655
with Q20	dependent	.00850

*1 Pearson chi-square probability

Number of Missing Observations: 3

SEX Sex by Q15g: The practical elements of the high school curriculum should not be taught in conjunction with local industry.

SEX	Q15g: strongly disagre 1.00	Disagree 2.00	Uncertain 3.00	Agree 4.00	Strongly agree 5.00	Row Total
1.00 Male	6	21	23	55	25	130
	6.5	23.0	23.6	51.4	25.4	59.1%
	4.6%	16.2%	17.7%	42.3%	19.2%	
	54.5%	53.8%	57.5%	63.2%	58.1%	
	2.7%	9.5%	10.5%	25.0%	11.4%	
2.00 FEMALE	5	18	17	32	18	90
	4.5	16.0	16.4	35.6	17.6	40.9%
	5.6%	20.0%	18.9%	35.6%	20.0%	
	45.5%	46.2%	42.5%	36.8%	41.9%	
	2.3%	8.2%	7.7%	14.5%	8.2%	
Column Total	11 5.0%	39 17.7%	40 18.2%	87 39.5%	43 19.5%	220 100.0%

Chi-Square	Value	DF	Significance
Pearson	1.20891	4	.87663
Likelihood Ratio	1.21007	4	.87644
Mantel-Haenszel test for linear association	.48915	1	.48431

Minimum Expected Frequency - 4.500
Cells with Expected Frequency < 5 - 1 OF 10 (10.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.07413			.87663 *1
Cramer's V	.07413			.87663 *1

Eta :
with SEX dependent .07413
with Q21 dependent .04726

*1 Pearson chi-square probability

Number of Missing Observations: 5

Question 16: Which of the following factors do you think affect the employment chances of high school graduates?

SEX Sex by Q16a: The gap between school courses and the needs of work.

Q16a Page 1 of 1

SEX	Count / Exp Val / Row Pct / Col Pct / Tot Pct	strongly disagre 1.00	Disagree 2.00	Uncertain 3.00	Agree 4.00	Strongly agree 5.00	Row Total
Male	1.00	3	15	18	70	27	133
		2.4	16.2	19.2	64.1	31.2	59.9%
		2.3%	11.3%	13.5%	52.6%	20.3%	
		75.0%	55.6%	56.3%	65.4%	51.9%	
		1.4%	6.8%	8.1%	31.5%	12.2%	
FEMALE	2.00	1	12	14	37	25	89
		1.6	10.8	12.8	42.9	20.8	40.1%
		1.1%	13.5%	15.7%	41.6%	28.1%	
		25.0%	44.4%	43.8%	34.6%	48.1%	
		.5%	5.4%	6.3%	16.7%	11.3%	
	Column Total	4 1.8%	27 12.2%	32 14.4%	107 48.2%	52 23.4%	222 100.0%

Chi-Square	Value	DF	Significance
Pearson	3.50478	4	.47715
Likelihood Ratio	3.52542	4	.47402
Mantel-Haenszel test for linear association	.11309	1	.73666

Minimum Expected Frequency - 1.604
Cells with Expected Frequency < 5 - 2 OF 10 (20.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.12565			.47715 *1
Cramer's V	.12565			.47715 *1

Eta :

with SEX	dependent	.12565
with Q22	dependent	.02262

*1 Pearson chi-square probability

Number of Missing Observations: 3

SEX Sex by Q16b: Lack of appropriate occupational guidance and counselling.

Q16b Page 1 of 1

SEX	Count / Exp Val / Row Pct / Col Pct / Tot Pct	strongly disagre 1.00	Disagree 2.00	Uncertain 3.00	Agree 4.00	Strongly agree 5.00	Row Total
1.00 Male		3	16	7	61	45	132
		3.0	14.2	8.9	56.8	49.1	59.2%
		2.3%	12.1%	5.3%	46.2%	34.1%	
		60.0%	66.7%	46.7%	63.5%	54.2%	
		1.3%	7.2%	3.1%	27.4%	20.2%	
2.00 FEMALE		2	8	8	35	38	91
		2.0	9.8	6.1	39.2	33.9	40.8%
		2.2%	8.8%	8.8%	38.5%	41.8%	
		40.0%	33.3%	53.3%	36.5%	45.8%	
		.9%	3.6%	3.6%	15.7%	17.0%	
Column Total		5 2.2%	24 10.8%	15 6.7%	96 43.0%	83 37.2%	223 100.0%

Chi-Square	Value	DF	Significance
Pearson	3.13316	4	.53579
Likelihood Ratio	3.12673	4	.53685
Mantel-Haenszel test for linear association	.61276	1	.43375

Minimum Expected Frequency - 2.040
Cells with Expected Frequency < 5 - 2 OF 10 (20.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.11853			.53579 *1
Cramer's V	.11853			.53579 *1

Eta :
with SEX dependent .11853
with Q23 dependent .05254

*1 Pearson chi-square probability

Number of Missing Observations: 2

SEX Sex by Q16c: Lack of practical and applied knowledge in the curriculum.

SEX	Count / Exp Val / Row Pct / Col Pct / Tot Pct	Q16c strongly disagre 1.00	Disagree 2.00	Uncertain 3.00	Agree 4.00	Strongly agree 5.00	Row Total
1.00 Male	Count	5	6	6	74	43	134
	Exp Val	3.0	7.1	6.6	74.4	42.9	59.6%
	Row Pct	3.7%	4.5%	4.5%	55.2%	32.1%	
	Col Pct	100.0%	50.0%	54.5%	59.2%	59.7%	
	Tot Pct	2.2%	2.7%	2.7%	32.9%	19.1%	
2.00 FEMALE	Count	0	6	5	51	29	91
	Exp Val	2.0	4.9	4.4	50.6	29.1	40.4%
	Row Pct	.0%	6.6%	5.5%	56.0%	31.9%	
	Col Pct	.0%	50.0%	45.5%	40.8%	40.3%	
	Tot Pct	.0%	2.7%	2.2%	22.7%	12.9%	
Column Total		5 2.2%	12 5.3%	11 4.9%	125 55.6%	72 32.0%	225 100.0%

Chi-Square	Value	DF	Significance
Pearson	3.97244	4	.40975
Likelihood Ratio	5.74981	4	.21863
Mantel-Haenszel test for linear association	.22880	1	.63241

Minimum Expected Frequency - 2.022
Cells with Expected Frequency < 5 - 4 OF 10 (40.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.13287			.40975 *1
Cramer's V	.13287			.40975 *1

Eta :

with SEX	dependent	.13287
with Q24	dependent	.03196

*1 Pearson chi-square probability

Number of Missing Observations: 0

SEX Sex by Q16d: Lack of training and internship for pupils.

	Q16d					Page 1 of 1
	Count / Exp Val / Row Pct / Col Pct / Tot Pct	strongly disagre 1.00	Disagree 2.00	Uncertain 3.00	Agree 4.00	Strongly agree 5.00	Row Total
SEX							
	1.00	1	8	8	76	40	133
Male		.6	7.2	9.5	72.2	43.5	59.6%
		.8%	6.0%	6.0%	57.1%	30.1%	
		100.0%	66.7%	50.0%	62.8%	54.8%	
		.4%	3.6%	3.6%	34.1%	17.9%	
	2.00	0	4	8	45	33	90
FEMALE		.4	4.8	6.5	48.8	29.5	40.4%
		.0%	4.4%	8.9%	50.0%	36.7%	
		.0%	33.3%	50.0%	37.2%	45.2%	
		.0%	1.8%	3.6%	20.2%	14.8%	
	Column Total	1 .4%	12 5.4%	16 7.2%	121 54.3%	73 32.7%	223 100.0%

Chi-Square	Value	DF	Significance
Pearson	2.75777	4	.59914
Likelihood Ratio	3.10551	4	.54033
Mantel-Haenszel test for linear association	.69731	1	.40369

Minimum Expected Frequency - .404
Cells with Expected Frequency < 5 - 3 OF 10 (30.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.11121			.59914 *1
Cramer's V	.11121			.59914 *1

Eta :

with SEX	dependent	.11121
with Q25	dependent	.05604

*1 Pearson chi-square probability

Number of Missing Observations: 2

SEX Sex by Q16e: Lack of emphasise on the significance of work in socio-economic development during their courses.

SEX	Q16e					Page 1 of 1
	Count / Exp Val / Row Pct / Col Pct / Tot Pct	strongly disagre 1.00	Disagree 2.00	Uncertai n 3.00	Agree 4.00	Strongly agree 5.00	Row Total
1.00		3	10	14	77	30	134
Male		2.4	12.6	15.6	70.6	32.9	59.8%
		2.2%	7.5%	10.4%	57.5%	22.4%	
		75.0%	47.6%	53.8%	65.3%	54.5%	
		1.3%	4.5%	6.3%	34.4%	13.4%	
2.00		1	11	12	41	25	90
FEMALE		1.6	8.4	10.4	47.4	22.1	40.2%
		1.1%	12.2%	13.3%	45.6%	27.8%	
		25.0%	52.4%	46.2%	34.7%	45.5%	
		.4%	4.9%	5.4%	18.3%	11.2%	
	Column Total	4 1.8%	21 9.4%	26 11.6%	118 52.7%	55 24.6%	224 100.0%

Chi-Square	Value	DF	Significance
Pearson	4.15658	4	.38523
Likelihood Ratio	4.16410	4	.38425
Mantel-Haenszel test for linear association	.07990	1	.77744

Minimum Expected Frequency - 1.607
Cells with Expected Frequency < 5 - 2 OF 10 (20.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.13622			.38523 *1
Cramer's V	.13622			.38523 *1

Eta :
with SEX dependent .13622
with Q26 dependent .01893

*1 Pearson chi-square probability

Number of Missing Observations: 1

SEX Sex by Q16f: Lack of opportunity for seeing and understanding the variety of occupations in society.

	Q16f					Page 1 of 1
SEX	Count / Exp Val / Row Pct / Col Pct / Tot Pct	strongly disagre 1.00	Disagree 2.00	Uncertai n 3.00	Agree 4.00	Strongly agree 5.00	Row Total
1.00 Male		4	19	8	59	43	133
		3.0	17.4	9.6	59.9	43.1	59.9%
		3.0%	14.3%	6.0%	44.4%	32.3%	
		80.0%	65.5%	50.0%	59.0%	59.7%	
		1.8%	8.6%	3.6%	26.6%	19.4%	
2.00 FEMALE		1	10	8	41	29	89
		2.0	11.6	6.4	40.1	28.9	40.1%
		1.1%	11.2%	9.0%	46.1%	32.6%	
		20.0%	34.5%	50.0%	41.0%	40.3%	
		.5%	4.5%	3.6%	18.5%	13.1%	
Column Total		5 2.3%	29 13.1%	16 7.2%	100 45.0%	72 32.4%	222 100.0%

Chi-Square	Value	DF	Significance
Pearson	1.90962	4	.75238
Likelihood Ratio	1.98584	4	.73836
Mantel-Haenszel test for linear association	.38800	1	.53335

Minimum Expected Frequency - 2.005
Cells with Expected Frequency < 5 - 2 OF 10 (20.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.09275			.75238 *1
Cramer's V	.09275			.75238 *1

Eta :
with SEX dependent .09275
with Q27 dependent .04190

*1 Pearson chi-square probability

Number of Missing Observations: 3

SEX Sex by Q16g: The failure of school management and teachers to use local opportunities for connecting education and work.

SEX	Q16g: strongly disagre (1.00)	Disagree (2.00)	Uncertain (3.00)	Agree (4.00)	Strongly agree (5.00)	Row Total
1.00 Male	2	24	13	73	19	131
	3.0	21.9	13.0	67.0	26.1	59.3%
	1.5%	18.3%	9.9%	55.7%	14.5%	
	40.0%	64.9%	59.1%	64.6%	43.2%	
	.9%	10.9%	5.9%	33.0%	8.6%	
2.00 FEMALE	3	13	9	40	25	90
	2.0	15.1	9.0	46.0	17.9	40.7%
	3.3%	14.4%	10.0%	44.4%	27.8%	
	60.0%	35.1%	40.9%	35.4%	56.8%	
	1.4%	5.9%	4.1%	18.1%	11.3%	
Column Total	5	37	22	113	44	221
	2.3%	16.7%	10.0%	51.1%	19.9%	100.0%

Chi-Square	Value	DF	Significance
Pearson	7.29773	4	.12097
Likelihood Ratio	7.20213	4	.12558
Mantel-Haenszel test for linear association	1.18594	1	.27615

Minimum Expected Frequency - 2.036
Cells with Expected Frequency < 5 - 2 OF 10 (20.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.18172			.12097 *1
Cramer's V	.18172			.12097 *1

Eta :

with SEX	dependent	.18172
with Q28	dependent	.07342

*1 Pearson chi-square probability

Number of Missing Observations: 4

SEX Sex by Q16h: Ignoring employer's opinions and suggestions about the curriculum.

SEX	Q16h					Page 1 of 1
	Count / Exp Val / Row Pct / Col Pct / Tot Pct	strongly disagre 1.00	Disagree 2.00	Uncertain 3.00	Agree 4.00	Strongly agree 5.00	Row Total
	1.00	7	26	27	50	22	132
Male		5.4	22.8	28.2	51.0	24.6	60.0%
		5.3%	19.7%	20.5%	37.9%	16.7%	
		77.8%	68.4%	57.4%	58.8%	53.7%	
		3.2%	11.8%	12.3%	22.7%	10.0%	
	2.00	2	12	20	35	19	88
FEMALE		3.6	15.2	18.8	34.0	16.4	40.0%
		2.3%	13.6%	22.7%	39.8%	21.6%	
		22.2%	31.6%	42.6%	41.2%	46.3%	
		.9%	5.5%	9.1%	15.9%	8.6%	
	Column Total	9 4.1%	38 17.3%	47 21.4%	85 38.6%	41 18.6%	220 100.0%

Chi-Square	Value	DF	Significance
Pearson	3.17166	4	.52952
Likelihood Ratio	3.29085	4	.51038
Mantel-Haenszel test for linear association	2.46631	1	.11631

Minimum Expected Frequency - 3.600
Cells with Expected Frequency < 5 - 1 OF 10 (10.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.12007			.52952 *1
Cramer's V	.12007			.52952 *1

Eta :

with SEX	dependent	.12007
with Q29	dependent	.10612

*1 Pearson chi-square probability

Number of Missing Observations: 5

SEX Sex by Q16i: Insufficient investment in the education-industry relationship to provide required facilities in this field.

SEX	Q16i					Page 1 of 1
	Count / Exp Val / Row Pct / Col Pct / Tot Pct	strongly disagre 1.00	Disagree 2.00	Uncertai n 3.00	Agree 4.00	Strongly agree 5.00	Row Total
Male	1.00	4	8	18	72	32	134
		2.4	11.3	15.5	64.9	39.9	59.6%
		3.0%	6.0%	13.4%	53.7%	23.9%	
		100.0%	42.1%	69.2%	66.1%	47.8%	
		1.8%	3.6%	8.0%	32.0%	14.2%	
FEMALE	2.00	0	11	8	37	35	91
		1.6	7.7	10.5	44.1	27.1	40.4%
		.0%	12.1%	8.8%	40.7%	38.5%	
		.0%	57.9%	30.8%	33.9%	52.2%	
		.0%	4.9%	3.6%	16.4%	15.6%	
	Column Total	4 1.8%	19 8.4%	26 11.6%	109 48.4%	67 29.8%	225 100.0%

Chi-Square	Value	DF	Significance
Pearson	11.90991	4	.01803
Likelihood Ratio	13.27385	4	.01001
Mantel-Haenszel test for linear association	1.50772	1	.21949

Minimum Expected Frequency - 1.618
Cells with Expected Frequency < 5 - 2 OF 10 (20.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.23007			.01803 *1
Cramer's V	.23007			.01803 *1

Eta :

with SEX	dependent	.23007
with Q30	dependent	.08204

*1 Pearson chi-square probability

Number of Missing Observations: 0

SEX Sex by Q16j: Belief that academic courses are more useful than vocational courses.

SEX	Q16j					Page 1 of 1
	Count / Exp Val / Row Pct / Col Pct / Tot Pct	strongly disagre 1.00	Disagree 2.00	Uncertai n 3.00	Agree 4.00	Strongly agree 5.00	Row Total
1.00		8	26	21	58	21	134
Male		6.6	24.0	16.2	56.5	30.6	60.1%
		6.0%	19.4%	15.7%	43.3%	15.7%	
		72.7%	65.0%	77.8%	61.7%	41.2%	
		3.6%	11.7%	9.4%	26.0%	9.4%	
2.00		3	14	6	36	30	89
FEMALE		4.4	16.0	10.8	37.5	20.4	39.9%
		3.4%	15.7%	6.7%	40.4%	33.7%	
		27.3%	35.0%	22.2%	38.3%	58.8%	
		1.3%	6.3%	2.7%	16.1%	13.5%	
Column Total		11 4.9%	40 17.9%	27 12.1%	94 42.2%	51 22.9%	223 100.0%

Chi-Square	Value	DF	Significance
Pearson	12.36607	4	.01483
Likelihood Ratio	12.49035	4	.01405
Mantel-Haenszel test for linear association	6.98310	1	.00823

Minimum Expected Frequency - 4.390
Cells with Expected Frequency < 5 - 1 OF 10 (10.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.23549			.01483 *1
Cramer's V	.23549			.01483 *1

Eta :

with SEX	dependent	.23549
with Q31	dependent	.17736

*1 Pearson chi-square probability

Number of Missing Observations: 2

SEX Sex by Q16k: Failure to take into account local needs and workplace requirements in the curriculum.

SEX	Q16k: strongly disagree 1.00	Disagree 2.00	Uncertain 3.00	Agree 4.00	Strongly agree 5.00	Row Total
1.00 Male	5	15	18	61	35	134
	3.6	16.8	15.0	58.9	39.7	60.1%
	3.7%	11.2%	13.4%	45.5%	26.1%	
	83.3%	53.6%	72.0%	62.2%	53.0%	
	2.2%	6.7%	8.1%	27.4%	15.7%	
2.00 FEMALE	1	13	7	37	31	89
	2.4	11.2	10.0	39.1	26.3	39.9%
	1.1%	14.6%	7.9%	41.6%	34.8%	
	16.7%	46.4%	28.0%	37.8%	47.0%	
	.4%	5.8%	3.1%	16.6%	13.9%	
Column Total	6	28	25	98	66	223
	2.7%	12.6%	11.2%	43.9%	29.6%	100.0%

Chi-Square	Value	DF	Significance
Pearson	4.88782	4	.29900
Likelihood Ratio	5.10066	4	.27712
Mantel-Haenszel test for linear association	1.09913	1	.29446

Minimum Expected Frequency - 2.395
Cells with Expected Frequency < 5 - 2 OF 10 (20.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.14805			.29900 *1
Cramer's V	.14805			.29900 *1

Eta :

with SEX	dependent	.14805
with Q32	dependent	.07036

*1 Pearson chi-square probability

Number of Missing Observations: 2

Question 17: Which of the following approaches are appropriate for the preparation of secondary school pupils so they can meet more effectively the demands of their future work life?

SEX Sex by Q17a: To emphasise the essential values, knowledge ans skills relating to work.

	Q17a					Page 1 of 1
SEX	Count / Exp Val / Row Pct / Col Pct / Tot Pct	strongly disagre 1.00	Disagree 2.00	Uncertai n 3.00	Agree 4.00	Strongly agree 5.00	Row Total
1.00		1	7	5	78	43	134
Male		1.8	9.5	4.2	69.1	49.4	59.6%
		.7%	5.2%	3.7%	58.2%	32.1%	
		33.3%	43.8%	71.4%	67.2%	51.8%	
		.4%	3.1%	2.2%	34.7%	19.1%	
2.00		2	9	2	38	40	91
FEMALE		1.2	6.5	2.8	46.9	33.6	40.4%
		2.2%	9.9%	2.2%	41.8%	44.0%	
		66.7%	56.3%	28.6%	32.8%	48.2%	
		.9%	4.0%	.9%	16.9%	17.8%	
Column Total		3 1.3%	16 7.1%	7 3.1%	116 51.6%	83 36.9%	225 100.0%

Chi-Square	Value	DF	Significance
Pearson	7.83912	4	.09765
Likelihood Ratio	7.83900	4	.09766
Mantel-Haenszel test for linear association	.00057	1	.98096

Minimum Expected Frequency - 1.213
Cells with Expected Frequency < 5 - 4 OF 10 (40.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.18666			.09765 *1
Cramer's V	.18666			.09765 *1

Eta :

with SEX	dependent	.18666
with Q33	dependent	.00159

*1 Pearson chi-square probability

Number of Missing Observations: 0

SEX Sex by Q17b: To allocate enough time and resources for introducing with work and its different effects.

Q17b Page 1 of 1

SEX	Count / Exp Val / Row Pct / Col Pct / Tot Pct	strongly disagre 1.00	Disagree 2.00	Uncertain 3.00	Agree 4.00	Strongly agree 5.00	Row Total
1.00 Male		3	14	7	65	43	132
		3.6	13.0	6.5	61.6	47.4	59.2%
		2.3%	10.6%	5.3%	49.2%	32.6%	
		50.0%	63.6%	63.6%	62.5%	53.8%	
		1.3%	6.3%	3.1%	29.1%	19.3%	
2.00 FEMALE		3	8	4	39	37	91
		2.4	9.0	4.5	42.4	32.6	40.8%
		3.3%	8.8%	4.4%	42.9%	40.7%	
		50.0%	36.4%	36.4%	37.5%	46.3%	
		1.3%	3.6%	1.8%	17.5%	16.6%	
Column Total		6 2.7%	22 9.9%	11 4.9%	104 46.6%	80 35.9%	223 100.0%

Chi-Square	Value	DF	Significance
Pearson	1.93173	4	.74831
Likelihood Ratio	1.92463	4	.74962
Mantel-Haenszel test for linear association	.46840	1	.49373

Minimum Expected Frequency - 2.448
Cells with Expected Frequency < 5 - 3 OF 10 (30.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.09307			.74831 *1
Cramer's V	.09307			.74831 *1

Eta :

with SEX	dependent	.09307
with Q34	dependent	.04593

*1 Pearson chi-square probability

Number of Missing Observations: 2

SEX Sex by Q17c: To emphasis training and internship in all courses.

Q17c Page 1 of 1

SEX	Count / Exp Val / Row Pct / Col Pct / Tot Pct	strongly disagre 1.00	Disagree 2.00	Uncertai n 3.00	Agree 4.00	Strongly agree 5.00	Row Total
1.00 Male		4	16	9	63	41	133
		3.6	19.6	6.5	57.6	45.7	59.4%
		3.0%	12.0%	6.8%	47.4%	30.8%	
		66.7%	48.5%	81.8%	64.9%	53.2%	
		1.8%	7.1%	4.0%	28.1%	18.3%	
2.00 FEMALE		2	17	2	34	36	91
		2.4	13.4	4.5	39.4	31.3	40.6%
		2.2%	18.7%	2.2%	37.4%	39.6%	
		33.3%	51.5%	18.2%	35.1%	46.8%	
		.9%	7.6%	.9%	15.2%	16.1%	
Column Total		6 2.7%	33 14.7%	11 4.9%	97 43.3%	77 34.4%	224 100.0%

Chi-Square	Value	DF	Significance
Pearson	6.49980	4	.16480
Likelihood Ratio	6.73529	4	.15056
Mantel-Haenszel test for linear association	.02609	1	.87169

Minimum Expected Frequency - 2.438
Cells with Expected Frequency < 5 - 3 OF 10 (30.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.17034			.16480 *1
Cramer's V	.17034			.16480 *1

Eta :

with SEX	dependent	.17034
with Q35	dependent	.01082

*1 Pearson chi-square probability

Number of Missing Observations: 1

SEX Sex by Q17d: To emphasise flexible and applied skills and knowledge.Employment Preparation

Q17d Page 1 of 1

SEX	Count / Exp Val / Row Pct / Col Pct / Tot Pct	strongly disagre 1.00	Disagree 2.00	Uncertain 3.00	Agree 4.00	Strongly agree 5.00	Row Total
1.00 Male		2	14	11	64	40	131
		1.8	11.2	10.0	64.9	43.1	59.0%
		1.5%	10.7%	8.4%	48.9%	30.5%	
		66.7%	73.7%	64.7%	58.2%	54.8%	
		.9%	6.3%	5.0%	28.8%	18.0%	
2.00 FEMALE		1	5	6	46	33	91
		1.2	7.8	7.0	45.1	29.9	41.0%
		1.1%	5.5%	6.6%	50.5%	36.3%	
		33.3%	26.3%	35.3%	41.8%	45.2%	
		.5%	2.3%	2.7%	20.7%	14.9%	
Column Total		3 1.4%	19 8.6%	17 7.7%	110 49.5%	73 32.9%	222 100.0%

Chi-Square	Value	DF	Significance
Pearson	2.55966	4	.63399
Likelihood Ratio	2.65554	4	.61702
Mantel-Haenszel test for linear association	2.27134	1	.13179

Minimum Expected Frequency - 1.230
Cells with Expected Frequency < 5 - 2 OF 10 (20.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.10738			.63399 *1
Cramer's V	.10738			.63399 *1

Eta :

with SEX	dependent	.10738
with Q36	dependent	.10138

*1 Pearson chi-square probability

Number of Missing Observations: 3

SEX Sex by Q17e: To establish annual exhibitions in various industrial fields where students can learn more about the industry and the jobs it offers.

Q17e Page 1 of 1

SEX	Count / Exp Val / Row Pct / Col Pct / Tot Pct	strongly disagre 1.00	Disagree 2.00	Uncertain 3.00	Agree 4.00	Strongly agree 5.00	Row Total
1.00		7	15	8	59	45	134
Male		6.6	13.8	11.4	53.8	48.5	59.8%
		5.2%	11.2%	6.0%	44.0%	33.6%	
		63.6%	65.2%	42.1%	65.6%	55.6%	
		3.1%	6.7%	3.6%	26.3%	20.1%	
2.00		4	8	11	31	36	90
FEMALE		4.4	9.2	7.6	36.2	32.5	40.2%
		4.4%	8.9%	12.2%	34.4%	40.0%	
		36.4%	34.8%	57.9%	34.4%	44.4%	
		1.8%	3.6%	4.9%	13.8%	16.1%	
Column Total		11 4.9%	23 10.3%	19 8.5%	90 40.2%	81 36.2%	224 100.0%

Chi-Square	Value	DF	Significance
Pearson	4.67077	4	.32278
Likelihood Ratio	4.62905	4	.32752
Mantel-Haenszel test for linear association	.20976	1	.64696

Minimum Expected Frequency - 4.420
Cells with Expected Frequency < 5 - 1 OF 10 (10.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.14440			.32278 *1
Cramer's V	.14440			.32278 *1

Eta :

with SEX	dependent	.14440
with Q37	dependent	.03067

*1 Pearson chi-square probability

Number of Missing Observations: 1

SEX Sex by Q17f: To visit industry and trade centres regularly.

	Q17f					Page 1 of 1
Count Exp Val Row Pct Col Pct Tot Pct	strongly disagre 1.00	Disagree 2.00	Uncertai n 3.00	Agree 4.00	Strongly agree 5.00	Row Total
SEX						
1.00	0	12	9	55	56	132
Male	1.2	10.7	10.7	48.5	61.0	59.2%
	.0%	9.1%	6.8%	41.7%	42.4%	
	.0%	66.7%	50.0%	67.1%	54.4%	
	.0%	5.4%	4.0%	24.7%	25.1%	
2.00	2	6	9	27	47	91
FEMALE	.8	7.3	7.3	33.5	42.0	40.8%
	2.2%	6.6%	9.9%	29.7%	51.6%	
	100.0%	33.3%	50.0%	32.9%	45.6%	
	.9%	2.7%	4.0%	12.1%	21.1%	
Column Total	2 .9%	18 8.1%	18 8.1%	82 36.8%	103 46.2%	223 100.0%

Chi-Square	Value	DF	Significance
Pearson	7.04749	4	.13340
Likelihood Ratio	7.77364	4	.10023
Mantel-Haenszel test for linear association	.12233	1	.72652

Minimum Expected Frequency - .816
Cells with Expected Frequency < 5 - 2 OF 10 (20.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.17777			.13340 *1
Cramer's V	.17777			.13340 *1

Eta :

with SEX	dependent	.17777
with Q38	dependent	.02347

*1 Pearson chi-square probability

Number of Missing Observations: 2

SEX Sex by Q17g: To decentralise curriculum development.

	Q17g					
	Count / Exp Val / Row Pct / Col Pct / Tot Pct	strongly disagre 1.00	Disagree 2.00	Uncertai n 3.00	Agree 4.00	Strongly agree 5.00	Row Total
SEX							
Male	1.00	1	19	30	60	21	131
		1.2	17.9	35.1	53.0	23.8	59.5%
		.8%	14.5%	22.9%	45.8%	16.0%	
		50.0%	63.3%	50.8%	67.4%	52.5%	
		.5%	8.6%	13.6%	27.3%	9.5%	
FEMALE	2.00	1	11	29	29	19	89
		.8	12.1	23.9	36.0	16.2	40.5%
		1.1%	12.4%	32.6%	32.6%	21.3%	
		50.0%	36.7%	49.2%	32.6%	47.5%	
		.5%	5.0%	13.2%	13.2%	8.6%	
	Column Total	2 .9%	30 13.6%	59 26.8%	89 40.5%	40 18.2%	220 100.0%

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Chi-Square	Value	DF	Significance
Pearson	5.22011	4	.26545
Likelihood Ratio	5.23618	4	.26391
Mantel-Haenszel test for linear association	.00762	1	.93043

Minimum Expected Frequency - .809
Cells with Expected Frequency < 5 - 2 OF 10 (20.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.15404			.26545 *1
Cramer's V	.15404			.26545 *1

Eta :

with SEX	dependent	.15404
with Q39	dependent	.00590

*1 Pearson chi-square probability

Number of Missing Observations: 5

SEX Sex by Q17h: To participate with employers in de

	Q17h		
Count / Exp Val / Row Pct / Col Pct / Tot Pct	strongly disagre 1.00	Disagree 2.00	Uncert n 3.
SEX			
1.00 Male	6	20	24
	6.0	17.9	25.7
	4.6%	15.3%	18.3%
	60.0%	66.7%	55.8%
	2.7%	9.1%	11.0%
2.00 FEMALE	4	10	19
	4.0	12.1	17.3
	4.5%	11.4%	21.6%
	40.0%	33.3%	44.2%
	1.8%	4.6%	8.7%
Column Total	10 4.6%	30 13.7%	43 19.6%

Chi-Square	Value
Pearson	5.52663
Likelihood Ratio	5.49044
Mantel-Haenszel test for linear association	1.10224

Minimum Expected Frequency - 4.018
Cells with Expected Frequency < 5 - 1 OF

Statistic		Value
Phi		.15886
Cramer's V		.15886
Eta :		
with SEX	dependent	.15886
with Q40	dependent	.07111

*1 Pearson chi-square probability

Number of Missing Observations: 6

Appendix 6.2: Chi-square results by Gender

SEX Sex by Q17h: To participate with employers in developing the high school curric

	Q17h				
Count / Exp Val / Row Pct / Col Pct / Tot Pct	strongly disagre 1.00	Disagree 2.00	Uncertai n 3.00	Agree 4.00	Strongly agree 5.00
SEX					
1.00 Male	6	20	24	60	21
	6.0	17.9	25.7	54.4	26.9
	4.6%	15.3%	18.3%	45.8%	16.0%
	60.0%	66.7%	55.8%	65.9%	46.7%
	2.7%	9.1%	11.0%	27.4%	9.6%
2.00 FEMALE	4	10	19	31	24
	4.0	12.1	17.3	36.6	18.1
	4.5%	11.4%	21.6%	35.2%	27.3%
	40.0%	33.3%	44.2%	34.1%	53.3%
	1.8%	4.6%	8.7%	14.2%	11.0%
Column Total	10 4.6%	30 13.7%	43 19.6%	91 41.6%	45 20.5%

Chi-Square	Value	DF
Pearson	5.52663	4
Likelihood Ratio	5.49044	4
Mantel-Haenszel test for linear association	1.10224	1

Minimum Expected Frequency - 4.018
Cells with Expected Frequency < 5 - 1 OF 10 (10.0%)

Statistic		Value	ASE1	Val/ASE0
Phi		.15886		
Cramer's V		.15886		
Eta :				
with SEX	dependent	.15886		
with Q40	dependent	.07111		

*1 Pearson chi-square probability

Number of Missing Observations: 6

SEX Sex by Q17i: To emphasise team work in school.

Q17i Page 1 of 1

SEX	Count / Exp Val / Row Pct / Col Pct / Tot Pct	strongly disagre 1.00	Disagree 2.00	Uncertain 3.00	Agree 4.00	Strongly agree 5.00	Row Total
1.00 Male		3	11	12	67	39	132
		2.4	13.1	11.9	61.8	42.8	59.5%
		2.3%	8.3%	9.1%	50.8%	29.5%	
		75.0%	50.0%	60.0%	64.4%	54.2%	
		1.4%	5.0%	5.4%	30.2%	17.6%	
2.00 FEMALE		1	11	8	37	33	90
		1.6	8.9	8.1	42.2	29.2	40.5%
		1.1%	12.2%	8.9%	41.1%	36.7%	
		25.0%	50.0%	40.0%	35.6%	45.8%	
		.5%	5.0%	3.6%	16.7%	14.9%	
	Column Total	4 1.8%	22 9.9%	20 9.0%	104 46.8%	72 32.4%	222 100.0%

Chi-Square	Value	DF	Significance
Pearson	3.11956	4	.53802
Likelihood Ratio	3.13650	4	.53525
Mantel-Haenszel test for linear association	.05029	1	.82255

Minimum Expected Frequency - 1.622
Cells with Expected Frequency < 5 - 2 OF 10 (20.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.11854			.53802 *1
Cramer's V	.11854			.53802 *1

Eta :

with SEX	dependent	.11854
with Q41	dependent	.01509

*1 Pearson chi-square probability

Number of Missing Observations: 3

SEX Sex by Q17j: To providing suitable opportunities for teachers to introduce workplace situations.

Q17j Page 1 of 1

SEX	Count / Exp Val / Row Pct / Col Pct / Tot Pct	strongly disagre 1.00	Disagree 2.00	Uncertai n 3.00	Agree 4.00	Strongly agree 5.00	Row Total
1.00 Male		4	11	15	55	49	134
		4.2	10.3	14.6	55.2	49.7	60.6%
		3.0%	8.2%	11.2%	41.0%	36.6%	
		57.1%	64.7%	62.5%	60.4%	59.8%	
		1.8%	5.0%	6.8%	24.9%	22.2%	
2.00 FEMALE		3	6	9	36	33	87
		2.8	6.7	9.4	35.8	32.3	39.4%
		3.4%	6.9%	10.3%	41.4%	37.9%	
		42.9%	35.3%	37.5%	39.6%	40.2%	
		1.4%	2.7%	4.1%	16.3%	14.9%	
	Column Total	7 3.2%	17 7.7%	24 10.9%	91 41.2%	82 37.1%	221 100.0%

Chi-Square	Value	DF	Significance
Pearson	.21676	4	.99453
Likelihood Ratio	.21816	4	.99447
Mantel-Haenszel test for linear association	.05824	1	.80931

Minimum Expected Frequency - 2.756
Cells with Expected Frequency < 5 - 2 OF 10 (20.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.03132			.99453 *1
Cramer's V	.03132			.99453 *1

Eta :

with SEX	dependent	.03132
with Q42	dependent	.01627

*1 Pearson chi-square probability

Number of Missing Observations: 4

SEX Sex by Q17k: To facilitate relations between school and other institutions by reforming management systems.

Q17k Page 1 of 1

SEX	Count / Exp Val / Row Pct / Col Pct / Tot Pct	strongly disagre 1.00	Disagree 2.00	Uncertain 3.00	Agree 4.00	Strongly agree 5.00	Row Total
1.00 Male		4	10	8	67	44	133
		3.0	10.2	13.2	61.1	45.5	59.9%
		3.0%	7.5%	6.0%	50.4%	33.1%	
		80.0%	58.8%	36.4%	65.7%	57.9%	
		1.8%	4.5%	3.6%	30.2%	19.8%	
2.00 FEMALE		1	7	14	35	32	89
		2.0	6.8	8.8	40.9	30.5	40.1%
		1.1%	7.9%	15.7%	39.3%	36.0%	
		20.0%	41.2%	63.6%	34.3%	42.1%	
		.5%	3.2%	6.3%	15.8%	14.4%	
	Column Total	5 2.3%	17 7.7%	22 9.9%	102 45.9%	76 34.2%	222 100.0%

Chi-Square	Value	DF	Significance
Pearson	7.47255	4	.11293
Likelihood Ratio	7.45162	4	.11386
Mantel-Haenszel test for linear association	.01983	1	.88801

Minimum Expected Frequency - 2.005
Cells with Expected Frequency < 5 - 2 OF 10 (20.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.18347			.11293 *1
Cramer's V	.18347			.11293 *1

Eta :

with SEX	dependent	.18347
with Q43	dependent	.00947

*1 Pearson chi-square probability

Number of Missing Observations: 3

SEX Sex by Q171: To emphasise quality management for developing approaches in these fields.

Q171 Page 1 of 1

SEX	Count / Exp Val / Row Pct / Col Pct / Tot Pct	strongly disagre 1.00	Disagree 2.00	Uncertai n 3.00	Agree 4.00	Strongly agree 5.00	Row Total
1.00 Male		3	10	24	62	33	132
		1.8	11.9	22.6	60.6	35.1	59.5%
		2.3%	7.6%	18.2%	47.0%	25.0%	
		100.0%	50.0%	63.2%	60.8%	55.9%	
		1.4%	4.5%	10.8%	27.9%	14.9%	
2.00 FEMALE		0	10	14	40	26	90
		1.2	8.1	15.4	41.4	23.9	40.5%
		.0%	11.1%	15.6%	44.4%	28.9%	
		.0%	50.0%	36.8%	39.2%	44.1%	
		.0%	4.5%	6.3%	18.0%	11.7%	
	Column Total	3 1.4%	20 9.0%	38 17.1%	102 45.9%	59 26.6%	222 100.0%

Chi-Square	Value	DF	Significance
Pearson	3.38230	4	.49600
Likelihood Ratio	4.44273	4	.34939
Mantel-Haenszel test for linear association	.23138	1	.63050

Minimum Expected Frequency - 1.216
Cells with Expected Frequency < 5 - 2 OF 10 (20.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.12343			.49600 *1
Cramer's V	.12343			.49600 *1

Eta :
with SEX dependent .12343
with Q44 dependent .03236

*1 Pearson chi-square probability

Number of Missing Observations: 3

SEX Sex by Q17m: To evaluate the curriculum in order to continuously improve goals and standards.

Q17m Page 1 of 1

SEX	Count / Exp Val / Row Pct / Col Pct / Tot Pct	strongly disagre 1.00	Disagree 2.00	Uncertain 3.00	Agree 4.00	Strongly agree 5.00	Row Total
1.00 Male		3	11	9	68	43	134
		2.4	10.1	13.1	64.9	43.5	59.6%
		2.2%	8.2%	6.7%	50.7%	32.1%	
		75.0%	64.7%	40.9%	62.4%	58.9%	
		1.3%	4.9%	4.0%	30.2%	19.1%	
2.00 FEMALE		1	6	13	41	30	91
		1.6	6.9	8.9	44.1	29.5	40.4%
		1.1%	6.6%	14.3%	45.1%	33.0%	
		25.0%	35.3%	59.1%	37.6%	41.1%	
		.4%	2.7%	5.8%	18.2%	13.3%	
Column Total		4 1.8%	17 7.6%	22 9.8%	109 48.4%	73 32.4%	225 100.0%

Chi-Square	Value	DF	Significance
Pearson	4.13422	4	.38815
Likelihood Ratio	4.08751	4	.39429
Mantel-Haenszel test for linear association	.00001	1	.99744

Minimum Expected Frequency - 1.618
Cells with Expected Frequency < 5 - 2 OF 10 (20.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.13555			.38815 *1
Cramer's V	.13555			.38815 *1

Eta :

with SEX	dependent	.13555
with Q45	dependent	.00000

*1 Pearson chi-square probability

Number of Missing Observations: 0

SEX Sex by Q17n: To use educational technology: TV, video, in teaching practical subjects.

Q17n Page 1 of 1

SEX	Count / Exp Val / Row Pct / Col Pct / Tot Pct	strongly disagre 1.00	Disagree 2.00	Uncertain 3.00	Agree 4.00	Strongly agree 5.00	Row Total
1.00 Male		3	6	10	46	68	133
		2.4	7.8	9.5	47.1	66.2	59.6%
		2.3%	4.5%	7.5%	34.6%	51.1%	
		75.0%	46.2%	62.5%	58.2%	61.3%	
		1.3%	2.7%	4.5%	20.6%	30.5%	
2.00 FEMALE		1	7	6	33	43	90
		1.6	5.2	6.5	31.9	44.8	40.4%
		1.1%	7.8%	6.7%	36.7%	47.8%	
		25.0%	53.8%	37.5%	41.8%	38.7%	
		.4%	3.1%	2.7%	14.8%	19.3%	
Column Total		4 1.8%	13 5.8%	16 7.2%	79 35.4%	111 49.8%	223 100.0%

Chi-Square	Value	DF	Significance
Pearson	1.61538	4	.80603
Likelihood Ratio	1.61877	4	.80541
Mantel-Haenszel test for linear association	.18627	1	.66604

Minimum Expected Frequency - 1.614
Cells with Expected Frequency < 5 - 2 OF 10 (20.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.08511			.80603 *1
Cramer's V	.08511			.80603 *1

Eta :

with SEX	dependent	.08511
with Q46	dependent	.02897

*1 Pearson chi-square probability

Number of Missing Observations: 2

SEX Sex by Q17o: To use occupational guidance and counsulting services in school.Employment Preparation

Q17o Page 1 of 1

SEX	Count / Exp Val / Row Pct / Col Pct / Tot Pct	strongly disagre 1.00	Disagree 2.00	Uncertain 3.00	Agree 4.00	Strongly agree 5.00	Row Total
1.00		3	12	11	54	52	132
Male		3.0	10.7	8.3	58.9	51.1	59.5%
		2.3%	9.1%	8.3%	40.9%	39.4%	
		60.0%	66.7%	78.6%	54.5%	60.5%	
		1.4%	5.4%	5.0%	24.3%	23.4%	
2.00		2	6	3	45	34	90
FEMALE		2.0	7.3	5.7	40.1	34.9	40.5%
		2.2%	6.7%	3.3%	50.0%	37.8%	
		40.0%	33.3%	21.4%	45.5%	39.5%	
		.9%	2.7%	1.4%	20.3%	15.3%	
Column Total		5 2.3%	18 8.1%	14 6.3%	99 44.6%	86 38.7%	222 100.0%

Chi-Square	Value	DF	Significance
Pearson	3.53773	4	.47216
Likelihood Ratio	3.72075	4	.44512
Mantel-Haenszel test for linear association	.38661	1	.53409

Minimum Expected Frequency - 2.027
Cells with Expected Frequency < 5 - 2 OF 10 (20.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.12624			.47216 *1
Cramer's V	.12624			.47216 *1

Eta :

with SEX	dependent	.12624
with Q47	dependent	.04183

*1 Pearson chi-square probability

Number of Missing Observations: 3

SEX Sex by Q17p: To emphasise careers education. Employment Preparation

	Q17p					Page 1 of 1
	Count / Exp Val / Row Pct / Col Pct / Tot Pct	strongly disagre 1.00	Disagree 2.00	Uncertai n 3.00	Agree 4.00	Strongly agree 5.00	Row Total
SEX							
	1.00	5	15	9	66	39	134
Male		3.6	17.3	12.5	63.1	37.5	59.6%
		3.7%	11.2%	6.7%	49.3%	29.1%	
		83.3%	51.7%	42.9%	62.3%	61.9%	
		2.2%	6.7%	4.0%	29.3%	17.3%	
	2.00	1	14	12	40	24	91
FEMALE		2.4	11.7	8.5	42.9	25.5	40.4%
		1.1%	15.4%	13.2%	44.0%	26.4%	
		16.7%	48.3%	57.1%	37.7%	38.1%	
		.4%	6.2%	5.3%	17.8%	10.7%	
	Column Total	6 2.7%	29 12.9%	21 9.3%	106 47.1%	63 28.0%	225 100.0%

Chi-Square	Value	DF	Significance
Pearson	5.04499	4	.28271
Likelihood Ratio	5.15587	4	.27167
Mantel-Haenszel test for linear association	.45757	1	.49876

Minimum Expected Frequency - 2.427
Cells with Expected Frequency < 5 - 2 OF 10 (20.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.14974			.28271 *1
Cramer's V	.14974			.28271 *1

Eta :

with SEX	dependent	.14974
with Q48	dependent	.04520

*1 Pearson chi-square probability

Number of Missing Observations: 0

SEX Sex by Q17q: To establish the office of partnership with industry in schools.

Q17q Page 1 of 1

SEX	Count / Exp Val / Row Pct / Col Pct / Tot Pct	strongly disagre 1.00	Disagree 2.00	Uncertain 3.00	Agree 4.00	Strongly agree 5.00	Row Total
1.00		3	14	10	67	38	132
Male		4.8	14.3	10.7	64.8	37.5	59.5%
		2.3%	10.6%	7.6%	50.8%	28.8%	
		37.5%	58.3%	55.6%	61.5%	60.3%	
		1.4%	6.3%	4.5%	30.2%	17.1%	
2.00		5	10	8	42	25	90
FEMALE		3.2	9.7	7.3	44.2	25.5	40.5%
		5.6%	11.1%	8.9%	46.7%	27.8%	
		62.5%	41.7%	44.4%	38.5%	39.7%	
		2.3%	4.5%	3.6%	18.9%	11.3%	
Column Total		8 3.6%	24 10.8%	18 8.1%	109 49.1%	63 28.4%	222 100.0%

Chi-Square	Value	DF	Significance
Pearson	1.92845	4	.74892
Likelihood Ratio	1.89099	4	.75580
Mantel-Haenszel test for linear association	.83632	1	.36045

Minimum Expected Frequency - 3.243
Cells with Expected Frequency < 5 - 2 OF 10 (20.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.09320			.74892 *1
Cramer's V	.09320			.74892 *1

Eta :

with SEX	dependent	.09320
with Q49	dependent	.06152

*1 Pearson chi-square probability

Number of Missing Observations: 3

SEX Sex by Q17r: To emphasise individual/social responsibilities.

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SEX	Count / Exp Val / Row Pct / Col Pct / Tot Pct	Q17r strongly disagre 1.00	Disagree 2.00	Uncertain 3.00	Agree 4.00	Strongly agree 5.00	Row Total
1.00 Male		5	10	12	66	40	133
		4.2	8.9	10.7	65.9	43.3	59.4%
		3.8%	7.5%	9.0%	49.6%	30.1%	
		71.4%	66.7%	66.7%	59.5%	54.8%	
		2.2%	4.5%	5.4%	29.5%	17.9%	
2.00 FEMALE		2	5	6	45	33	91
		2.8	6.1	7.3	45.1	29.7	40.6%
		2.2%	5.5%	6.6%	49.5%	36.3%	
		28.6%	33.3%	33.3%	40.5%	45.2%	
		.9%	2.2%	2.7%	20.1%	14.7%	
Column Total		7 3.1%	15 6.7%	18 8.0%	111 49.6%	73 32.6%	224 100.0%

Chi-Square	Value	DF	Significance
Pearson	1.78432	4	.77535
Likelihood Ratio	1.81355	4	.77000
Mantel-Haenszel test for linear association	1.69564	1	.19286

Minimum Expected Frequency - 2.844
Cells with Expected Frequency < 5 - 2 OF 10 (20.0%)

Statistic	Value	ASE1	Val/ASE0	Approximate Significance
Phi	.08925			.77535 *1
Cramer's V	.08925			.77535 *1

Eta :

with SEX	dependent	.08925
with Q50	dependent	.08720

*1 Pearson chi-square probability

Number of Missing Observations: 1